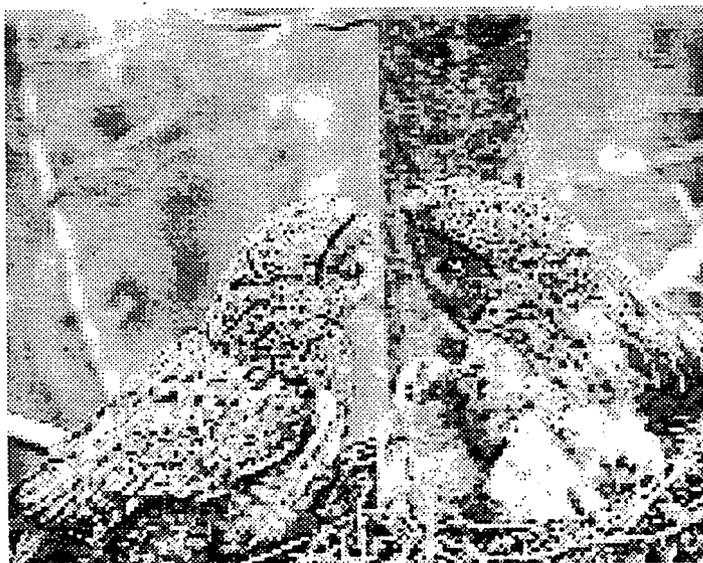
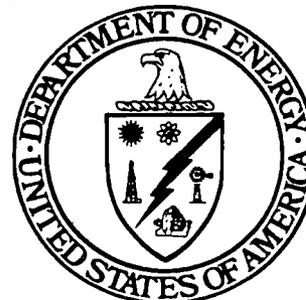


# Environmental Restoration Program



Monthly  
Report for  
September 1993



Rocky Flats Office

October 20, 1993

"U/NU"  
Reviewed for Classification/UCNI  
BY D. BOGGS  
DATE 10/14/93

ADMINISTRATOR

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**EXECUTIVE SUMMARY**

**SIGNIFICANT ACTIVITIES AND ACHIEVEMENTS FOR SEPTEMBER 1993**

Review of the OU1 final Remedial Investigation (RI) document was completed at the end of September 1993. The completion of the current revisions is scheduled for October 1993.

The OU 2 soil vapor extraction pilot plant is operational and ready to function. A 5-week extension from the start-up date of September 15, 1993, was granted by the regulatory agencies based on the presence of non-aqueous phase liquids (NAPLs) at test site 1. The impact of the NAPL material is being evaluated. The NAPL impact on the test objectives and performance of the Interim Measure/Interim Remedial Action (IM/IRA) is also being evaluated. The soil vapor extraction pilot plant is being reconfigured to operate in the presence of NAPLs. A schedule extension is expected.

In OU 3, offsite areas, Department of Energy (DOE) sent the Jefferson County (JeffCo) summer biannual report to JeffCo. This report identifies activities related to the JeffCo Remedy Acres as required by the 1985 McKay vs. U.S. et. al. Settlement Agreement.

The Colorado Department of Health (CDH), the Environmental Protection Agency (EPA), and the DOE reached an agreement to resolve the OU 4 Solar Ponds dispute concerning the Draft and Final Phase I RCRA Field Investigation/Remedial Investigation (RFI/RI) Report. The resulting agreement represents a streamlining of activities to recover delays incurred in the early phases of the IAG schedule for OU 4. It also expedites closure activities with respect to future baseline IAG milestones.

The OU 4 Accelerated Sludge Removal Project (ASRP) draft Design Criteria Package (DCP) was completed September 10, 1993. The issuance of the final document will conclude the conceptual design process. Title II design will begin in October 1993.

The regulatory agencies reviewed DOE's 11-month extension schedule request for OU 6 and concluded that there was good cause for a 10-month extension for the submittal of the Draft and Final RFI/RI Reports. DOE accepted the 10-month extension and the new milestone delivery dates for submittal of the reports are June 10, 1994, and November 18, 1994.

DOE is reviewing the final Health and Safety Plan (HSP) for implementation of nonintrusive field work for the Industrial Area Operable Units (IA OUs): OUs 8, 9, 10, 12, 13 and 14.

A meeting among DOE, the regulatory agencies and EG&G was held on September 29, 1993, to review comments on the proposed intrusive field work for Fiscal Year (FY) 94. The meeting involved review of the proposed ranking of the IA OUs IHSSs for potential linkage to decontamination and decommissioning (D&D) and the Transition Plan. The outcome of the meeting resulted in a plan to move forward on presentation of the D&D/Transition linkage and to quantify the intrusive field work for FY94.

Interim Measures/Interim Remedial Action Plan (IM/IRAP) - The technical evaluations for the Phase II Geologic Characterization Data Acquisition are complete and a subcontractor recommendation was submitted to RFP Procurement. It is expected that the subcontractor award will be completed by October 1, 1993. Matrix support requests are being prepared to secure technical support for the project.

The Rocky Flats Plant (RFP) Electronic Community Bulletin Board System (BBS) is on-line. The BBS provides public access to documents relating to the environmental restoration (ER) of the RFP. Features of the BBS include: an index of other government bulletin boards, a listing of metropolitan Denver area reading rooms and their documents, upcoming public meetings, the ER Program Monthly Report, and ER fact sheets. Access to the RFP BBS can be made through a computer with a phone modem; the phone number to access the RFP BBS modem is 966-9103.

**IAG Performance Indicators for Monthly Report**

<u>Number of IAG Milestones to Date</u>	<u>Current FY93 (10/1/92 - 9/30/93)</u>	<u>Since IAG Inception</u>
Scheduled (including approved extensions)	15	92
Met	11	66
Extensions Granted	7	22
Extensions Denied	2	1
Remaining this FY93 (to 9/30/93)	3*	n/a
Added	1	1
Deleted	4	4

<u>Deliverable in Review by Regulators</u>	<u>Project</u>	<u>Date Submitted</u>
	OU 14 Final Phase I RFI/RI Work Plan	19 Oct 92

<u>Field Work Currently Underway</u>	<u>Project</u>	<u>Scheduled Complete</u>
	OU 2	8 Oct 93
	OU 3	13 Jul 93
	OU 4	Jan 96 <sup>a</sup>
	OU 5	15 Jul 93
	OU 7	30 Apr 93
	OU 8	16 Sep 94
	OU 9	18 Aug 94
	OU 10	15 Aug 94
	OU 12	05 Sep 94
	OU 13	17 Feb 95
	OU 14	11 May 95
	OU 15	29 Aug 93

<sup>a</sup> for all field work phases

<u>IM/IRA Status</u>	<u>Gallons Treated</u>
OU 1 881 Hillside Treatment	1,569,257 gallons
OU 2 903 Pad Water Treatment	18,013,036 gallons
OU 4 Water Management Tasks	Project is in operations phase

<u>IAG Document Deliverables Due Next 6 months</u>	<u>Due Date</u>	<u>Expected Date</u>
OU 1 Draft CMS/FS Report	11 Feb 94	31 Mar 94 *
OU 1 Final Phase III RFI/RI Report	04 Jan 93	15 Nov 93 *
OU 1 Final Proposed Plan	04 Jan 94	17 May 95 *
OU 2 Draft CMS/FS Report	04 Nov 93	17 Oct 96 *
OU 5 Draft Phase I RFI/RI Report	30 Nov 93	09 Feb 95 *
OU 7 Draft Phase I RFI/RI Report	12 Oct 93	20 Dec 93 *

<u>Overdue Deliverables</u>	<u>Due Date</u>	<u>Expected Date</u>
OU 1 Draft Proposed Plan	27 Sep 93	30 Sep 94 *
OU 2 Draft RFI/RI Report	12 Mar 93	16 Dec 93 *
OU 2 Final Phase II RFI/RI Report	09 Aug 93	23 May 94 *
OU 2 Final Treatability Test Report (RRS)	08 Sep 93	08 Sep 93 *

\*TBD because of HHRA issues work stoppage.



**PROBLEMS AND PROGRAMMATIC ISSUES**

**Procurement Status**

The projected procurement plan for RFP/Environmental Restoration Management (ERM) was completed. This plan addresses all capital equipment requirements over \$25,000 and subcontractor needs for FY94.

**Other**

A Notice of Violation (NOV) was received from the regulatory agencies concerning the missed IAG milestone for the OU 2 Final Phase II RFI/ RI Report. A stop work order for the risk assessment portion of the RFI/RI reports was issued by the regulatory agencies for OU 1 through 7 on August 12, 1993. Since the stop work order prevented the completion of the Human Health Risk Assessment (HHRA) section of the RFI/RI, the NOV was unexpected.

The OU 4 streamlined approach will require coordination between all parties and participation in the administration and technical design processes. The revised milestones represent a significant acceleration of closure of the Solar Evaporation Ponds (OU 4) and, consequently, the cost profile for OU 4 changed and now exceeds the original budget targets for FY94 and FY96. The regulatory agencies were informed that potential increased funding for the acceleration of activities in OU 4 may be taken out of other OU budgets, thus delaying activities in these OUs covered by the IAG.

In OU 4, Solar Ponds, the Building 910 evaporator has operated intermittently, since the repair of the feed line. Problems associated with the new units continue to occur and are being repaired, as necessary.

A schedule extension was requested for the Draft and Final OU 5 Phase I RFI/RI Report for November 30, 1993, and May 5, 1994, respectively. EPA and CDH are currently reviewing the extension requests.

OU 12 requested a milestone extension for the Draft RFI/RI Report due on April 20, 1994, and the Final RFI/RI Report due on September 15, 1994.

The regulatory agencies have agreed with the need to stop work on portions of the baseline Human Health Risk Assessment (HHRA) for OUs 1, 2, 3, 4, 5, 6 and 7. Work has stopped until an agreement is reached among the parties to the IAG for guidance on the methodology for the baseline risk assessments and preparation of the RFI/RI Reports.



**NEAR-TERM IAG MILESTONES**

<u>OU#</u>	<u>IAG Milestone Description</u>	<u>Date Scheduled to EPA/CDH</u>	<u>Status</u>
2 <sup>a</sup>	Submit Draft Phase II RFI/RI Report	12 Mar 93	Extension denied (delinquent)
4	Submit Draft Phase I RFI/RI Report	N/A	Deleted
2 <sup>a</sup>	Submit Final Treatability Test Report	13 Jul 93	Extension to 8 Sep 93 (delinquent)
3 <sup>a</sup>	Submit Draft Phase I RFI/RI Report	16 Jul 93	Extension to 14 Feb 94
6 <sup>a</sup>	Submit Draft Phase I RFI/RI Report	4 Aug 93	Extension to 10 Jun 94
2 <sup>a</sup>	Submit Final Phase II RFI/RI Report	9 Aug 93	Extension denied (delinquent)
7 <sup>a</sup>	Submit Draft Phase I RFI/RI Report	12 Oct 93	*
4	Submit Final Phase I RFI/RI Report	N/A	Deleted
2 <sup>a</sup>	Submit Draft CMS/FS Report	04 Nov 93	*
1 <sup>a</sup>	Submit Final Phase III RFI/RI Report	04 Jan 93	Extension to 15 Nov 93
5 <sup>a</sup>	Submit Draft Phase I RFI/RI Report	30 Nov 93	Extension request submitted
3 <sup>a</sup>	Submit Final Phase I RFI/RI Report	13 Dec 93	Extension to 21 Oct 94
1 <sup>a</sup>	Submit Draft Proposed Plan	27 Sep 93	Extension request submitted
1 <sup>a</sup>	Submit Final Proposed Plan	04 Jan 94	Extension request submitted
6 <sup>a</sup>	Submit Final Phase I RFI/RI Report	07 Jan 94	Extension to 18 Nov 94
1 <sup>a</sup>	Submit Draft CMS/FS Report	31 Mar 93	Extension to 11 Feb 94
8	Submit Draft Phase I RFI/RI Report	14 Feb 94	*
7 <sup>a</sup>	Submit Final Phase I RFI/RI Report	16 Mar 94	*
9	Submit Final Phase I RFI/RI Report	11 Apr 94	*
4	Submit Draft Phase I Proposed IM/IRA Decision Document	14 Apr 94	*
12	Submit Draft Phase I RFI/RI Report	20 Apr 94	Extension request submitted
4	Submit Draft Phase II Work Plan	22 Apr 94	*
5 <sup>a</sup>	Submit Final Phase I RFI/RI Report	03 May 94	Extension request submitted
1 <sup>a</sup>	Submit Draft Responsiveness Summary	06 May 94	*
2 <sup>a</sup>	Submit Final CMS/FS Report	10 May 94	*
2 <sup>a</sup>	Submit Draft Proposed Plan	10 May 94	*
8	Submit Final Phase I RFI/RI Report	12 Jul 94	*
15	Submit Draft Phase I RFI/RI Report	01 Aug 94	On schedule
1 <sup>a</sup>	Submit Final CMS/FS Report	03 Aug 94	*
1 <sup>a</sup>	Submit Draft CAD/ROD	03 Aug 94	*
1 <sup>a</sup>	Submit Final Responsiveness Summary	03 Aug 94	*
13	Submit Draft Phase I RFI/RI Report	08 Aug 94	*
2 <sup>a</sup>	Submit Final Proposed Plan	09 Aug 94	*
10	Submit Draft Phase I RFI/RI Report	25 Aug 94	*
9	Submit Final Phase I RFI/RI Report	06 Sep 94	*
4	Submit Final Phase I Proposed IM/IRA Decision Document	12 Sep 94	Extension to 24 Jun 94
7 <sup>a</sup>	Submit Draft Phase II RFI/RI Work Plan	13 Sep 94	*
12	Submit Final Phase I RFI/RI Report	15 Sep 94	Extension request submitted
4	Submit Final Phase II RFI/RI Work Plan	19 Sep 94	*
11	Submit Draft Phase I RFI/RI Report	20 Sep 94	*
1 <sup>a</sup>	Submit Final CAD/ROD	01 Nov 94	*
4	Submit IM/IRA Responsiveness Summary	25 Jan 95	Accelerated to 01 Nov 94

\* Behind original IAG schedule; extension required.

a. OU 1 through OU 7 may require additional extensions because of HHRA issues work stoppage.

## **SECTION 1. INTRODUCTION**

This monthly status report presents the current status and technical achievements of the Rocky Flats Environmental Restoration Program for September 1993. This program implements the Interagency Agreement (IAG) among the U.S. Department of Energy (DOE), the U.S. Environmental Protection Agency (EPA), and the State of Colorado to investigate, assess, and remediate, where necessary, contaminated areas at or adjacent to DOE's Rocky Flats Plant in Golden, Colorado. This agreement was signed on January 22, 1991. The work is being performed for DOE by EG&G Rocky Flats, Inc.

Technical progress, schedule status, and milestone status for each Operable Unit (OU) as well as other program activities are presented in Section 2. Section 3. contains the schedules for routine environmental sampling as required by Paragraph 210 of the Interagency Agreement. Section 4. contains a list that identifies the contractors and subcontractors performing work on the program as required by Paragraph 13 of the IAG.

## SECTION 2. PROJECT STATUS

### 2.1 OU 1 - 881 HILLSIDE AREA

The alluvial ground water at the 881 Hillside Area, located north of Woman Creek in the southeast section of Rocky Flats Plant (RFP), was contaminated in the 1960s and 1970s with solvents and radionuclides. The area is approximately 2 miles from the eastern, outer edge of the plant's buffer zone at Indiana Street. The various Individual Hazardous Substance Sites (IHSS) that make up OU 1 were being investigated and treated as high-priority sites because of potentially elevated concentrations of organic compounds in the near-surface ground water and the proximity of the contamination to a drainage system leading to an offsite drinking water supply. The selected Interim Remedial Action (IRA) at OU 1 involved construction of an underground drainage system called a French drain that intercepts and contains near-surface ground water flowing from the OU 1 area. The near-surface water is treated at the 891 treatment facility, designed for this purpose, and released onsite into the South Interceptor Ditch (SID) along Woman Creek. Water collected from this ditch undergoes a secondary analysis prior to release. IRA construction was completed in April 1992. The Remedial Investigation and Feasibility Study (RI/FS) to determine the final remedial action are continuing in parallel with operation of the IRA.

#### 2.1.1 OU 1 ASSESSMENT

**Scope of Work Changes This Period**            None

**Technical Approach Changes This Period**            None

<b>IAG Milestone Accomplishments</b>	Submit Draft Phase III RFI/RI Work Plan	06 Feb 90
	Submit Final Phase III RFI/RI Work Plan	31 Oct 90
	Submit Draft Phase III RFI/RI Report	28 Oct 92

#### **Future IAG Milestones Through FY94**

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Final Phase III RFI/RI Report	04 Jan 93	15 Nov 93	15 Nov 93*
Submit Draft CMS/FS Report	31 Mar 93	11 Feb 94	31 Mar 94*
Submit Final CMS/FS Report	27 Sep 93	03 Aug 94	30 Sep 94*
Submit Draft PP	27 Sep 93		30 Sep 94*
Submit Final PP	04 Jan 94		17 May 95*
Submit Draft Responsiveness Summary	06 May 94		02 Nov 95*
Submit Final Responsiveness Summary	03 Aug 94		12 Apr 96*
Submit Draft CAD/ROD	03 Aug 94		12 Apr 96*

\*TBD due to HHRA issues work stoppage.

**September Work Activity Status**

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**Remedial Investigation (RI)** - Review of the final RI document was completed in September 1993. Incorporation of revisions will be complete by late October 1993 and at that time all work on this project will be stopped.

The regulatory agencies have agreed with the need to stop work on the following portions of the baseline Human Health Risk Assessment (HHRA) for OUs 1, 2, 3, 4, 5, 6, and 7:

1. Aggregation of RI data for the purpose of comparing to background concentrations.
2. Selection of the contaminants of concern (COC) for both ecological and baseline HHRA.
3. Aggregation of data for the purpose of conducting an exposure assessment.

Work has stopped until an agreement is reached among the parties to the IAG for guidance on the methodology for the baseline risk assessments and preparation of the RFI/RI Reports. Work stopped for OU 1 as of June 21, 1993. Other portions of the risk assessment including data evaluation, identification of exposure scenarios, selection of exposure parameters, and ecological effects assessment are proceeding as scheduled.

A meeting with the regulatory agencies was held to discuss the proposed demonstration of the ohmic heating technology for OU 1. This work will be completed as a treatability study. A field tour was conducted among DOE and the innovative technology staff from Battelle Northwest Laboratories to determine if the OU 1 site is an appropriate spot for the demonstration. A meeting was scheduled with the regulatory agencies to discuss how this demonstration could be conducted.

**Feasibility Study/Corrective Measures Study (FS/CMS)** - Work on the FS is in progress. Technical Memorandum (TM) #10, *Preliminary Remediation Goals*, was submitted to the regulatory agencies on September 7, 1993. Work on TM #11, *Alternatives Array*, is progressing towards the October 1993 delivery date. However, this submittal will have to be renegotiated based on the duration of the stop work order.

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**Technical Memoranda**

**Project**

**OU 1 881 Hillside**

TM #10

TM Title

TM Status:

Preliminary Remediation Goals

Submitted Draft TM to DOE: Feb 93

DOE comments were completed for Appendix A of TM 10: May 93.

When preparation is concluded or is estimated to be concluded: 15 Aug 93

Projected date of submittal to EPA/CDH: 7 Sep 93

Actual date of submittal: N/A

Date when comments were received: N/A

TM #11

TM Title

TM Status

Alternative Array

Submitted Draft TM to DOE: 21 Oct 93

When preparation is concluded or is estimated to be concluded: 20 Oct 93

Projected date of submittal to EPA/CDH: 15 Nov 93

Actual date of submittal: N/A

Date when comments were received: N/A

**Planned Work for October**

- Complete revised Final RI report in October 1993.

**Problems**

A stop work order on portions of the baseline HHRA was received June 21, 1993. All downstream milestones associated with the baseline HHRA will be delayed.

**Open Items**

Work is stopped until an agreement is reached among the regulatory agencies and DOE to guidance on the methodology for the baseline risk assessment and preparation of the RFI/RI Reports.

**2.1.2 OU 1 REMEDIATION**

**Scope of Work Changes This Period**      None

**Technical Approach Changes This Period**      None

<b>IAG Milestone Accomplishments</b>	Submit Draft Proposed IM/IRA Decision Document	18 Sep 89
	Submit Proposed IM/IRA Decision Document	06 Oct 89
	Submit Final IM/IRA Decision Document	05 Jan 90
	Begin Phase I-A IM/IRA Construction	15 Jan 90
	Restart Phase I-A IM/IRA Construction (after shutdown)	20 Jun 90
	Begin Phase I-B IM/IRA Construction (ahead of schedule)	28 Sep 90
	Submit IM/IRA Implementation Document	22 Feb 91
	Begin Phase II-A IM/IRA Construction	01 Apr 91
	Begin IM/IRA Testing	05 Aug 91
	Begin Phase II-B IM/IRA Construction	03 Sep 91
	Complete IM/IRA Construction (891 treatment building)	02 Mar 92
	Complete IM/IRA Construction (French drain)	13 Apr 92

**Future IAG Milestones Through FY94**      None

**September Work Activity Status**      Final results were received on the unplanned release of 60,000 gallons of treated water from Tank 207. Results show that all discharge standards were met with the exception of iron. The applicable, relevant and appropriate requirement (ARAR) for dissolved iron is .3 milligrams per liter (mg/l). Laboratory analysis indicates that the iron content was .357 mg/l total and .34 mg/l dissolved. Therefore, the ARAR was exceeded for this parameter. No adverse effects are expected due to the release.

The unplanned release resulted in the shutdown of operations at the facility. Five draft standard operating procedures (SOPs) for the 881 Interim Measure/Interim Remedial Action (IM/IRA) treatment facility were completed. The completion of these procedures allowed for the resumption of the partial operation of the treatment facility. A shift order was issued to allow this partial

resumption under draft procedures. Only those activities with procedures will be performed. Additional procedures are being worked on for the remaining aspects of operation of the plant.

Retreatment of Tank 205 was successful in reducing the levels of iron below discharge standards.

Support for Building 891 continues with flow meter specification and the subsequent completion of the purchase request for the meters. The completion of these activities allow for a water balance to be determined from the influent and effluent flows.

Treated ground-water this month: 31,294 gallons  
Total treated to date: 1,569,257 gallons

**Planned Work for October**

- Complete Draft Quarterly Report.
- Begin gas chromatograph installation.

**Problems**

None

**Open Items**

None



**2.2 OU 2 - 903 PAD, MOUND, AND EAST TRENCHES**

The contamination at the 903 Pad and Mound areas is largely attributed to the storage in the 1950s and 1960s of waste drums that corroded over time, allowing hazardous and radioactive material to leak into the surrounding soil. Additional contamination may have resulted from wind dispersion during drum removal and soil movement activities. The East Trenches Area was used for disposal of plutonium- and uranium-contaminated waste and sanitary sewage sludge from 1954 to 1968. Two areas adjacent to the trenches were used for spray irrigation of sewage treatment plant effluent; some may have contaminants that were not removed by the treatment system.

An IM/IRA provides for surface water in source areas of contamination to be collected, treated, and discharged to the surface water drainage. Operation of a field-scale treatability unit for the South Walnut Creek drainage began in May 1991. The effectiveness of the treatment process will be evaluated at three locations: the entrance to the treatment facility, several points within the facility, and the discharge point. After completion of the field-scale treatability tests, the unit is anticipated to remain in service until the final remedial action is operational. The RI and FS are continuing in parallel with the IRA.

A second IM/IRA was established in late-1991. This Subsurface Investigation Interim Measure/Interim Remedial Action Plan/Environmental Assessment (IM/IRAP/EA) is north of Woman Creek and encompasses the 903 Pad, the Mound Area, and the East Trenches Area of OU 2. This IM/IRAP/EA identifies and evaluates interim remedial actions for removal of residual free-phase volatile organic compound (VOC) contamination from three distinct subsurface environments at OU 2. Each of the VOC-removal actions involve in situ vacuum-enhanced vapor extraction technology. The interim remedial actions for the collection of information will aid in the selection and design of final remedial actions that address subsurface, residual free-phase VOC contamination at OU 2.

**2.2.1 OU 2 ASSESSMENT**

<b>Scope of Work Changes This Period</b>	None	
<b>Technical Approach Changes This Period</b>	None	
<b>IAG Milestone Accomplishments</b>	Submit Draft Phase II RFI/RI Work Plan (Alluvial)	21 Dec 89
	Submit Final Phase II RFI/RI Work Plan (Alluvial)	12 Apr 90
	Submit Draft Phase II RFI/RI Work Plan (Bedrock)	05 Feb 91
	Submit Final Phase II RFI/RI Work Plan (Bedrock)	02 Jul 91

**Future IAG Milestones  
Through FY94**

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase II RFI/RI Report	12 Mar 93	Denied	16 Dec 93 *
Submit Final Phase II RFI/RI Report	09 Aug 93	Denied	23 May 94 *
Submit Draft CMS/FS Report	04 Nov 93		17 Oct 96*
Submit Final CMS/FS Report	10 May 94		26 Jun 97*
Submit Draft PP	10 May 94		26 Jun 97*
Submit Final PP	09 Aug 94		13 Jan 98*

\*TBD due to HHRA issues work stoppage.

**September Work Activity  
Status**

All OU 2 assessment field activities are complete with the exception of one well test. Well 22593 (WC-1B) was considered dry, since it could not be developed within 4 weeks. However, 6 weeks after development began, a sample was collected as part of the ground water program. The sample results for well 22593 indicate no contamination.

The regulatory agencies have directed DOE to stop work on the following portions of the baseline HHRA for OUs 1, 2, 3, 4, 5, 6, and 7:

1. Aggregation of RI data for the purpose of comparing to background concentrations.
2. Selection of the COC for both ecological and baseline HHRA.
3. Aggregation of data for the purpose of conducting an exposure assessment.

Work has stopped until an agreement is reached among the parties to the IAG for guidance on the methodology for the baseline risk assessments. Work stopped for OU 2 as of June 21, 1993. Other portions of the risk assessment including data evaluation, identification of exposure scenarios, selection of exposure parameters, and ecological effects assessment are proceeding as scheduled.

A Notice of Violation (NOV) was received from the regulatory agencies concerning the missed IAG milestone for the OU 2 Final Phase II RFI/RI Report. This NOV was not expected, as a stop work order for the risk assessment portion of the RFI/RI reports was issued by the regulatory agencies for OUs 1 through 7 on August 12, 1993. The stop work order prevents completion of the HHRA, and the RFI/RI report is incomplete without this section.

**Technical Memoranda**

**Project**

**OU 2-903 Pad, Mound, and East Trenches**

TM #5  
TM Title  
TM Status

Exposure Scenarios  
When preparation is concluded or is estimated to be concluded: 15 Jan 93  
Projected date of submittal to EPA/CDH: 15 Jan 93  
Actual date of submittal: 15 Jan 93  
Date when comments were received: 11 Feb 93 EPA,  
12 Mar 93 CDH

TM #6  
TM Title  
TM Status

Modeling  
When preparation is concluded or is estimated to be concluded: 15 Jan 93  
Projected date of submittal to EPA/CDH: 15 Jan 93  
Actual date of submittal: 15 Jan 93  
Date when comments were received: 01 Apr 93 EPA,  
31 Mar 93 CDH

TM #7  
TM Title  
TM Status

Surficial Soils  
When preparation is concluded or is estimated to be concluded: 07 Jan 93  
Projected date of submittal to EPA/CDH: 07 Jan 93  
Actual date of submittal: 12 Jan 93  
Date when comments were received: 21 Jan 93  
TM Approved

TM #8  
TM Title  
TM Status

Bedrock  
When preparation is concluded or is estimated to be concluded: 15 Mar 93  
Projected date of submittal to EPA/CDH: 01 Mar 93  
Actual date of submittal: 15 Mar 93  
Date when comments are received: 14 Apr 93 EPA,  
14 Apr 93 CDH  
TM approved

**DOE, Rocky Flats Plant**

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TM #8 Addendum

TM Title

Contingency Plan for revised Phase II RFI/RI Work Plan (Bedrock)

TM Status

When preparation is concluded or is estimated to be concluded:

Projected date of submittal to EPA/CDH: 7/12/93

Actual date of submittal: 7/12/93

Date when comments are received:

TM approved

TM #9

TM Title

Chemicals of Concern

TM Status

When preparation is concluded or is estimate to be concluded: 24 Aug 93

Projected date of submittal to EPA/CDH: Unknown due to work stoppage

Actual date of submittal:

Date when comments are received:

TM #10

TM Title

Toxicity Assessment

TM Status

When preparation is concluded or is estimated to be concluded: 24 Aug 93

Projected date of submittal to EPA/CDH: Unknown due to work stoppage

Actual date of submittal:

Date when comments are received:

**Planned Work for October**

- Continue to work on sections of the Phase II RFI/RI Report that are not dependent on the risk assessment tasks.
- Complete final well test and demobilization of field project.

**Problems**

An NOV was received from the regulatory agencies concerning the missed IAG milestone for the OU 2 Final Phase II RFI/RI Report.

**Open Items**

Work has stopped until an agreement is reached among the regulatory agencies and DOE to guidance on the methodology for the baseline risk assessment, which is an integral part of the RFI/RI Reports.

**2.2.2 OU 2 REMEDIATION**

**Scope of Work Changes This Period**      None

**Technical Approach Changes This Period**      None

<b>IAG Milestone Accomplishments</b>	Submit Draft Proposed IM/IRA Decision Document	19 Jun 90
	Submit Proposed Plan IM/IRA Decision Document	18 Sep 90
	Submit Draft Responsiveness Summary	13 Dec 90
	Submit Final Responsiveness Summary and Final IM/IRA Decision Document	11 Jan 91
	Field Treatability Test System Installation Complete	10 May 91
	Begin Field Treatability Testing (Carbon System)	03 May 91
	Submit Draft Treatability Test Report (Phase I GAC)	01 Apr 92
	Complete IM/IRA Construction (radionuclides removal system)	03 May 91
	Begin Field Treatability Testing (radionuclides removal system)	01 Apr 92
	Submit Final Treatability Test Report (Phase I GAC)	02 Jun 92
	Submit Subsurface Site I Draft Test Plan	29 Oct 92
	Submit Subsurface Site I Final Test Plan	12 Jan 93
	Submit Subsurface Site 2 Draft Test Report	24 Jun 93
	Submit Draft Surface Water Field Treatability Report	Jul 13 93

**Future IAG Milestones Through FY94**

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase II Treatability Study Report	18 May 93	13 Jul 93	13 Jul 93
Submit Final Phase II Treatability Study Report	13 Jul 93	8 Sep 93	8 Sep 93

**September Work Activity Status**

**Subsurface Water IM/IRA** - Drilling operations at test site 1 were completed. The Integrated Work Control Package (IWCP) was approved, and the readiness review was completed.

The soil vapor extraction pilot plant is operational and ready to function. A 5-week extension from the start-up date of September 15, 1993, was granted by the regulatory agencies based on the presence of non-aqueous phase liquids (NAPLs) at test site 1. The impact of the NAPL material on the pilot testing objectives, operational safety, and performance of the off-gas treatment system is being evaluated. The NAPL impact on the test objectives and performance of the IM/IRA is also being evaluated. A schedule extension is expected.

Efforts continue to obtain a subcontract for the detailed soil vapor survey (SVS). Supplemental proposals for the work, including the health and safety monitoring equipment, were received and the supplemental technical evaluation was submitted to RFP Procurement on September 15, 1993. RFP Procurement is in the final stages of evaluating the supplemental proposals before a subcontractor is selected and an award is made.

**Surface Water IM/IRA** - Quarterly notification for periods of noncollection at the OU 2 Field Treatability Unit (FTU) were completed on September 3, 1993. This information was forwarded to the regulatory agencies. The total time of noncollection for May, June, and July 1993 was 14.25 hours (including routine generator servicing and maintenance).

DOE requested the regulatory agencies to consider a reduction in the sampling at the FTU. The current Sampling and Analysis Plan includes many samples for use in the OU 2 FTU Field Treatability Study Report, which was submitted (draft) on July 13, 1993.

Preventative maintenance continues at the FTU. All pressure gauges, flow meters, and other items that require annual recalibration/inspection were inventoried and are being prepared for recalibration. All paper work will be prepared, so the items can be sent to the EG&G Metrology Laboratory in October 1993. The portable 250-kilowatt (kW) generator that provides power to the FTU was taken off-line and was scheduled for a complete rebuild of the engine and generator. The

rebuild of the engine and generator will take approximately 5 to 6 weeks. Plant Power provided a portable 400-kW diesel generator to provide interim power to the FTU. The facility could not collect water for 1 hour on September 15, 1993, since no power was available during the generator change out.

The Draft Surface Water IM/IRA Treatability Study Report (TSR) is in review at the regulatory agencies.

An accelerated schedule was implemented to incorporate SOPs into daily operations. The OU 2 FTU should be operating under SOPs by November 1993. Currently, operations activities are referred to in the Operations and Maintenance Manuals.

The seep located adjacent to the OU 2 surface water station 59 (SW59) continues to grow in size. The DOE will seek permission from the regulatory agencies to divert this water and treat it at the FTU. The water that is near SW59, shows identical VOC contamination as the water in SW59. By collecting and treating this water, the area impacted by the contaminants in the water will be minimized.

Treated surface water this month: 610,296 gallons  
Total treated water: 18,013,036 gallons

**Planned Work for  
October**

Subsurface IRA Program

- Begin preventative management inventory.
- Continue efforts to procure a subcontract for the detailed SVS.
- Continue treating water at the OU 2 FTU.

Surface IRA Program

- Secure comments from the regulatory agencies on the Draft Surface Water IM/IRAP Treatability Study Report, address comments, and finalize report.

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**Problems**

The seep located adjacent to the OU 2 surface water station 59 (SW59) continues to grow in size. The DOE will seek permission from the regulatory agencies to divert this water and treat it at the FTU. The water that is near SW59, shows identical VOC contamination as the water in SW59. By collecting and treating this water, the area impacted by the contaminants in the water will be minimized.

**Open Items**

None

**2.3 OU 3 - OFFSITE AREAS**

OU 3 can be divided into two categories based on two main activities. The IAG directs activities according to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This involves assessment of contamination in offsite areas also referred to as Contamination of the Land Surface (IHSS 199), Great Western Reservoir (IHSS 200), Standley Lake (IHSS 201), and Mower Reservoir (IHSS 202). The second category responds to a 1985 out-of-court lawsuit settlement, McKay vs. U.S., which directed that the surface soil contamination be remediated. Remedial activities in compliance with the Settlement Agreement (deep disc plowing) began in 1985. The disturbance resulting from remediation is being revegetated with mediocre success. The overall schedule for this activity is determined by the year-to-year success of the revegetation effort and requirements of the landowners.

**Scope of Work Changes This Period**      None

**Technical Approach Changes This Period**      None

<b>IAG Milestone Accomplishments</b>	Submit Draft Past Remedy Report	26 Oct 90
	Submit Draft Historical Information/ Preliminary HealthRisk Assessment Report	09 Nov 90
	Submit Final Past Remedy Report	02 Apr 91
	Submit Final Historical Information/ Preliminary HealthRisk Assessment Report	16 Apr 91
	Submit Draft Phase I RFI/RI Work Plan	10 Jul 91
	Submit Final Phase I RFI/RI Work Plan	06 Dec 91

**Future IAG Milestones Through FY94**

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase I RFI/RI Report	16 Jul 93	14 Feb 94	14 Feb 94*
Submit Final Phase I RFI/RI Report	13 Dec 93	21 Oct 94	21 Oct 94*

\*TBD due to HHRA issue work stoppage.

**September Work Activity Status**      DOE transmitted the Jefferson County (JeffCo) summer biannual report to Jeffco. This report identifies activities related to the JeffCo Remedy Acres as required by the 1985 McKay vs. U.S. et. al. Settlement Agreement. In addition, weed control actions on the JeffCo Settlement

Agreement property began September 8, 1993, with mowing of selected areas. This work was completed in 3 days.

On September 22, 1993, a meeting was held with the regulatory agencies to review their comments on TM #2, *Exposure Scenarios for the HHRA*. Resolving the comments with the regulatory agencies will avoid the production of a final version of the TM. Responses to the comments will be incorporated into the OU 3 Draft Phase I RFI/RI Report.

The final version of the OU 3 Area of Concern (AOC) document is underway. DOE will receive the final document by October 1, 1993. EPA gave approval to the document following the incorporation of its revisions to the July 1993 draft.

RFP Procurement is currently working on Modification #6 of the contract to develop the Draft and Final Phase I RFI/RI Reports. This modification provides resources needed to adjust the contract following the approval of the schedule extension. The expected date for approval to begin work is October 1, 1993.

The regulatory agencies have agreed with the need to stop work on the following portions of the baseline HHRA for OUs 1, 2, 3, 4, 5, 6, and 7:

1. Aggregation of RI data for the purpose of comparing to background concentrations.
2. Selection of the COC for both ecological and baseline HHRA.
3. Aggregation of data for the purpose of conducting an exposure assessment.

Work has stopped until an agreement is reached among the parties to the IAG for guidance on the methodology for the baseline risk assessments and preparation of the RFI/RI Reports. Work stopped for OU 3 as of July 23, 1993. Other portions of the risk assessment including data evaluation, identification of exposure scenarios, selection of exposure parameters, and ecological effects assessment are proceeding as scheduled.

Technical Memoranda

Project

OU 3-Offsite Areas

TM #1

TM Title

TM Status

Field Changes to RFI/RI Work Plan

When preparation is concluded or is estimated to be concluded: 10 May 93

Projected date of submittal to EPA/CDH: 10 May 93

Actual date of submittal: 10 May 93

Date when comments were received: No comments expected.

TM #2

TM Title

TM Status

Exposure Scenarios for the HHRA

When preparation is concluded or is estimated to be concluded: 12 May 93

Projected date of submittal to EPA/CDH: 12 May 93

Actual date of submittal: 03 May 93

Date when comments were received: 15 Jul 93

TM #3

TM Title

TM Status

Modeling

When preparation is concluded or is estimated to be concluded: 29 Sep 93

Projected date of submittal to EPA/CDH: 29 Sep 93

Actual date of submittal: N/A

Date when comments were received: N/A

TM # 4

TM Title

TM Status

Contaminants of Concern

When preparation is concluded or is estimated to be concluded: 18 Oct 93

Projected date of submittal to EPA/CDH: 18 Oct 93

Actual date of submittal: N/A

Date when comments were received: N/A

Currently under a work stoppage

**Planned Work for October**

- Complete and distribute OU 3 identification of an AOC document.
- Send offsite field sampling results to individual landowners.

**Problems**

A stop work order on portions of the baseline HHRA was received July 23, 1993. All downstream milestones associated with the baseline HHRA will be delayed.

**Open Items**

Work is stopped until an agreement is reached among the regulatory agencies and DOE to guidance on the methodology for the baseline risk assessment and preparation of the RFI/RI Reports.

## 2.4 OU 4 - SOLAR EVAPORATION PONDS

OU 4 is comprised of five solar evaporation ponds: 207A, 207B series (north, center, south), and 207C, which were constructed for treatment and storage of process water from industrial operations. The process water contained treated acidic wastes, industrial liquid wastes (e.g., metal plating solutions), and low-level radioactive wastes.

As technology improved through the early 1960s and 1970s, the ponds were relined with various upgraded materials. However, leakage from the ponds into the soil and ground water was detected. Interceptor trenches were installed in 1971 to collect and recycle contaminated ground water to the ponds and to minimize natural seepage and pond leakage from entering North Walnut Creek. In 1981, these trenches were replaced by the current, larger interceptor trench system (ITS), which returned approximately 4 million gallons of ground water back into the solar evaporation ponds each year.

No additional process water has been pumped into the ponds since 1986. However, the ITS collected and returned ground water into the solar evaporation ponds until new storage tanks were completed and placed in operation in April 1993. The tanks allowed the RFP to stop placement of contaminated ground water into the ponds. This placement of water into the ponds had been occurring without meeting Land Disposal Restrictions and Minimum Technology Requirements of Resource Conservation and Recovery Act (RCRA). A new, dedicated Building 910 evaporation-treatment facility became operational in July 1993. This building processes the water stored in the modular tanks.

The Solar Evaporation Ponds Project has been comprised of four subprojects: (1) pond sludge processing by means of the Agreement in Principle between DOE and CDH; (2) a water management/treatment by means of the Interim Measure/Interim Remedial Action (IM/IRA) Decision Document signed by EPA, CDH and DOE; (3) the OU 4 assessment and remedial action by means of the IAG, which identified the ponds as one of the sixteen operable units (OUs) to be remediated at the RFP and incorporated the 1988 Ponds-Closure Plan submitted by DOE to the regulators; and (4) pad operations and storage activities that are necessary to meet the plant's RCRA interim status and permit requirements with regards to storage of pond wastes. The water management and pond sludge clean-out are necessary precursors to OU 4 assessment and remediation, and pad operations are necessary support activities at least until the pond sludge waste is disposed. Revisions to these subprojects are being prepared in accordance with the recent dispute resolution for OU 4.

These four subprojects were planned to close the ponds and remediate the ponds area. The project was scoped to (1) remove water from the ponds, (2) provide a treatment facility to replace the ponds as evaporation-treatment and storage units for pond-related contaminated ground water, (3) remove and dispose of pond sludge in compliance with all regulations such as the Land Disposal Restrictions of RCRA, (4) assess the nature and extent of contamination at the ponds; (5) complete a RCRA closure of the impoundments; and (6) remediate the ponds as needed.

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The April 1992 IM/IRA was developed as a regulatory agency requirement that was out of scope from the tasks outlined in the IAG. DOE attempted to modify an existing permit for water removal and treatment for liquids in the solar ponds and ground water collected by the ITS, but the regulatory agencies rejected permit modification and required development of an IM/IRA to document operation and use of the proposed water treatment system and provide the permitting mechanism for the system. The development and implementation of this IM/IRA preceded and overlapped the IAG scheduled Phase I RFI/RI field work. All construction has been completed, and the IM/IRA treatment facility is now in operation.

The RCRA CERCLA investigation Phase I field work began in FY93 and will continue through construction of the final corrective/remedial action. The technical scope to be performed by means of the IAG is funded through the OU 4 Assessment and Remediation area, with the other areas funded to provide necessary precursor and support activities to allow that IAG scope be completed. There is an IM/IRA scheduled in the IAG that will be completed based on results from the Phase I RFI/RI field work. The first draft of the IAG IM/IRA is scheduled for delivery in April 1994, with intensive interaction between the plant and the regulators to ensure the draft will require very little revision.

### 2.4.1 OU 4 ASSESSMENT

**Scope of Work Changes This Period**      Baseline change in preparation

**Technical Approach Changes This Period**      None

<b>Open Items</b>	Submit Draft Phase I RFI/RI Work Plan	08 Jun 90
	Submit Final Phase I RFI/RI Work Plan	26 Nov 90

#### **Future IAG Milestones Through FY94**

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase I RFI/RI Report	N/A	Deleted
Submit Final Phase I RFI/RI Report	N/A	Deleted
Submit Draft Phase II RFI/RI Work Plan	22 Apr 94	22 Apr 94
Submit Final Phase II RFI/RI Work Plan	19 Sep 94	19 Sep 94

**September Work Activity Status**      The Colorado Department of Health (CDH), the Environmental Protection Agency (EPA) and the Department of Energy (DOE) reached an agreement to resolve the OU 4 Solar Ponds dispute concerning the Draft and Final Phase I RFI/RI Report. The resulting agreement represents a streamlining of activities to

recover delays incurred in the early phases of the IAG schedule for OU 4. It also expedites closure activities with respect to future baseline IAG milestones.

The regulatory agencies and DOE resolved the dispute by drafting the following provisions:

1. The requirements for a Draft and Final Phase I RFI/RI Report for OU 4 (Solar Ponds) are eliminated, thus the milestone dates are eliminated. This eliminates the original basis for the dispute.
2. A new IAG milestone is established for "All Solar Ponds emptied of Water and Sludge" with an IAG milestone date of January 20, 1995.
3. The following IAG milestones are revised as shown:

<u>DESCRIPTION</u>	<u>ORIGINAL DATE</u>	<u>NEW DATE</u>
Submit draft Phase I RFI/RI	N/A	Deleted
Submit final Phase I RFI/RI Report	N/A	Deleted
Submit draft Proposed IM/IRA DD (with enhanced conceptual design)	4/14/94	4/14/94
Submit Proposed IM/IRA DD	9/12/94	6/24/94
Submit IM Design Work Plan (replaced with in-process design review)	5/24/95	Deleted
Submit IM/IRA Responsiveness Summary	1/25/95	11/1/94
Submit Final IM/IRA DD and Resp. Summary	4/24/95	1/13/95
Submit IM/IRA Implementation Document (combined with Title II Design Submittal)	2/26/96	Deleted
Submit final IM/IRA Title II Design	6/24/96	2/10/95
All Solar Ponds emptied of water and sludge	New	1/20/95
Begin Actual I IM/IRA Construction	1/28/97	9/27/95

This streamlined approach will require coordination between all parties and participation in the administration and technical design processes. The revised milestones represent a significant acceleration of closure of the Solar Evaporation Ponds (OU 4) and, consequently, the cost profile for OU 4 has changed and now exceeds the original budget targets for FY94 and FY96. The regulatory agencies were informed by DOE that the acceleration of activities in OU 4 may delay activities in other OUs covered by the IAG. The regulatory agencies have agreed that potential budgetary impacts to the other OUs will be considered as a basis for good cause for a

schedule extension provided that the DOE makes a timely presentation of all relevant information supporting the schedule extension, demonstrates that budget impacts cannot be mitigated, and demonstrates that good cause remains.

On September 10, 1993, a meeting was held to present the data for the OU 4 Phase I RFI/RI program to the regulatory agencies.

Pre-mobilization planning activities were conducted for mobilization into Pond 207B Center and North on September 13, 1993. On September 10, 1993, a meeting was held with EG&G's readiness review personnel for final approval to drill. Some delays were encountered due to recent procedural changes. Drilling is expected to start about October 11, 1993.

Core logging activities were extended for 1 week for the OU 4 Phase I RFI/RI Program until September 17, 1993. The remaining six are being processed. Data evaluation and report development continues for the OU 4 Phase I RFI/RI Report. Approximately 95% of the analytical data is in for the subsurface and surficial soil samples taken to date.

The regulatory agencies have agreed with the need to stop work on the following portions of the baseline HHRA for OUs 1, 2, 3, 4, 5, 6, and 7:

1. Aggregation of RI data for the purpose of comparing to background concentrations.
2. Selection of the COC for both ecological and baseline HHRA.
3. Aggregation of data for the purpose of conducting an exposure assessment.

Work has stopped until an agreement is reached among the parties to the IAG for guidance on the methodology for the baseline risk assessments and preparation of the RFI/RI Reports. Work stopped for OU 4 as of August 12, 1993. Other portions of the risk assessment including data evaluation, identification of exposure scenarios, selection of exposure parameters, and ecological effects assessment are proceeding as scheduled.

Technical Memoranda

Project

OU 4-Solar Evaporation Ponds

TM #1  
TM Title  
TM Status

Vadose Zone Investigation  
Draft submitted to EPA/CDH: 16 Nov 92  
Comments received: 30 Nov 92  
Conditional Approval: 30 Nov 92  
Projected submittal of Final to EPA/CDH: 15 Dec 92  
Actual submittal date of Final: 15 Dec 92  
Submittal of TM 1 Vadose Zone Schedule: 19 May 93  
EPA/CDH Final Approval of TM 1: 17 Jun 93

TM #2  
TM Title  
TM Status

Modification to Field Activities  
Draft submitted to EPA/CDH: 18 Mar 93  
Comments received: 07 May 93  
Projected submittal of Final to EPA/CDH: 07 Jun 93  
Actual submittal date of Final: 09 Jun 93  
EPA/CDH Final Approval of TM 2: 30 Jun 93

TM #3  
TM Title  
TM Status

Environmental Evaluation  
Draft submitted to EPA/CDH: 19 Mar 93  
Comments received: EPA 21 Apr 93  
CDH 02 Jun 93  
Projected submittal of Final to EPA/CDH: 30 Apr 93  
Actual submittal date of Final: 02 Jul 93  
EPA/CDH Final Approval of TM 3: 30 Jul 93

TM #4  
TM Title  
TM Status

Human Health Risk Assessment Exposure Scenarios  
Draft submitted to EPA/CDH: 19 Mar 93  
Comments received: EPA 21 Apr 93, CDH 23 Apr 93  
Projected submittal of Final to EPA/CDH: 11 Jun 93  
Actual submittal date of Final: 11 Jun 93  
EPA/CDH Final Approval of TM 4: 25 Jun 93

TM #5  
TM Title  
TM Status

Exposure Models  
Projected submittal of Draft to EPA/CDH: 01 Aug 93  
Actual submittal of Draft : 24 Jun 93  
Projected submittal of Final to EPA/CDH: 15 Oct 93  
Received stop work order: 24 Aug 93

TM #6  
TM Title  
TM Status

Contaminants of Concern  
Projected submittal of Draft to EPA/CDH: 09 Nov 93  
Projected submittal of Final to EPA/CDH: 22 Dec 93  
Received stop work order: 24 Aug 93

TM #7  
TM Title  
TM Status

Toxicity Assessment  
Projected submittal of Draft to EPA/CDH: 04 Nov 93  
Projected submittal of Final to EPA/CDH: 22 Dec 93  
Received stop work order: 24 Aug 93

**Planned Work for October**

- Proceed with RFI field work inside Ponds B-North and B-Center.
- Prepare budget change packages to rebaseline subprojects per DOE's dispute resolution.
- Commence Title II design for new sludge storage tanks.
- Receive proposals for sludge tanks and place order for tanks.
- Begin planning to close and D&D Building 788 in preparation for Phase I remediation.
- Initiate National Environmental Policy Act (NEPA) document submittal for determination on Phase I remediation.
- Submit Part A permit modification for tank storage on 750 Pad and Investigative Derived Material (IDM) drum storage in Building 788.

**Problems**

This streamlined approach will require coordination between all parties and participation in the administration and technical design processes. The revised milestones represent a significant acceleration of closure of the Solar Evaporation Ponds (OU 4) and, consequently, the cost profile for OU 4 has changed and now exceeds the original budget targets for FY94 and FY96. The regulatory agencies were informed by DOE that the acceleration of activities in OU 4 may delay activities in other OUs covered by the IAG, due to funds diversion to OU 4.

A stop work order on portions of the baseline HHRA was received August 12, 1993. All downstream milestones associated with the baseline HHRA will be delayed.



**Water Management** - The Building 374 evaporators are awaiting replacement of a main heat exchanger. Because of delays in taking Building 374 evaporators out of service, no pond water was pumped to Building 374; however, the evaporators are still available for use. In light of this, Building 374 has agreed to take pond water during this period. The transfer of pond water to Building 374 supports the new Table 6 IAG milestone to empty the ponds.

The Building 910 evaporator has operated intermittently, since the repair of the feed line. Problems associated with the new units continue to occur and are being repaired as necessary. These problems are causing discontinuous operation but are becoming less frequent. Problems with level controls in the MEMS brine tanks and pump leaks have prevented continuous operations as planned. Because of the pumping of rainwater from the empty ponds, Pond 207 B South is increasing in content volume. A letter requesting relief from this activity was sent to the RCRA organization. The request is to leave the rainwater in the pond and allow it to evaporate. Approval of this request will eliminate costs of the water transfer. Pond 207 B North was radiologically surveyed in preparation for drilling. The RCRA inspections of 207 A pond were discontinued.

**Pad Operations and Storage** - EG&G assisted in the sampling of existing pondcrete per a request by the State of Nevada. EG&G and Nevada Test Site (NTS) personnel met to resolve questions and coordinate with DOE. Concurrence of justification, scope, funding and schedule occurred and sampling was completed.

The Pad Sealing Project was completed on the 750 and 904 Pads. One problem on the 750 Pad remains unresolved. Because of problems that developed after the planning of the Pad Seal Project, about 150 square feet remain unsealed. This problem was included in Pad Surface Improvements. Work is scheduled to be completed by October 15, 1993. This will allow termination of runoff collection on the 750 Pad. Collection of runoff continues at the 904 pad, pending the verification of the effectiveness of the pad sealing.

**Planned Work for October**

- Drill and sample the 207 B North and Center Ponds for interim measure assessment activities.

**Problems**

In OU 4, Solar Ponds, the Building 910 evaporator has operated intermittently, since the repair of the feed line. Problems associated with the new units continue to occur and are being repaired as necessary. These problems are causing discontinuous operation, but are becoming less frequent. Problems with level controls in the MEMS brine tanks and pump leaks have prevented continuous operations as planned.

**Open Items**

None



**2.5 OU 5 - WOMAN CREEK**

This activity encompasses assessment and remediation of 10 IHSSs in the Woman Creek drainage: Original Landfill (IHSS 115); Ash Pits (IHSS 133.1 - 133.4); Incinerator (IHSS 133.5); Concrete Wash Pad (IHSS 133.6); Detention Ponds C-1 and C-2 (IHSS 142.10 and 142.11); Surface Disturbance (IHSS 209), southeast of Building 881. Two additional surface disturbances have been identified and are located, one south of the Ash Pits and a second west of IHSS 209. These last two sites have been included in the OU 5 Work Plan. Possible contamination in this operable unit was caused by landfill operations, storm-water runoff into holding ponds, and ash-pit operations. Constituents in OU 5 are believed to include nitrates, depleted uranium, metals, beryllium, solvents, pesticides, oils, paints, and cleaners. Media affected include soils, sediments, surface water, ground water, and air resuspension.

**Scope of Work Changes This Period**      None

**Technical Approach Changes This Period**      None

<b>IAG Milestone Accomplishments</b>	Submit Draft Phase I RFI/RI Work Plan	05 Apr 91
	Submit Final Phase I RFI/RI Work Plan	30 Aug 91

**Future IAG Milestones Through FY94**

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase I RFI/RI Report	30 Nov 93		09 Feb 95*
Submit Final Phase I RFI/RI Report	03 May 94		18 Oct 95*

\* TBD due to HHRA issues work stoppage.

**September Work Activity Status**

A schedule extension was requested for the OU 5 Draft and Final Phase I RFI/RI Report for November 30, 1993, and May 5, 1994, respectively. EPA and CDH are currently reviewing the extension requests.

OU 5 was selected for a DOE technical audit. The post audit debriefing was held September 14, 1993. DOE completed the field portion of the technical audit. RFP made comments on the audit, consolidated these comments and returned them to the auditors. One of the issues of the technical audit was the frequency of the duplicate samples, which were collected for the borings. The RFP database indicated that the duplicate frequency was about five percent; the OU 5 Field Sampling Plan

(FSP) requires ten percent. Subsequently, the data was reviewed and duplicate samples were collected from core that was in storage. In all cases, the holding time will not be exceeded until November 1993 for rads and metals. The samples were sent to the laboratories for analysis. The four remaining issues from the audit were programmatic and will be addressed when the final audit documents are received.

A Cost/Productivity Improvement (PI) Program cost savings initiative was held on September 27, 1993, with the Plant Change Control Board (PCCB). Through process improvements (using screening techniques, e.g. High Purity Germanium (HPGe) survey, geophysical surveys rather than drilling) the cost of the boring program at Individual Hazardous Substance Sites (IHSSs) 133.1 through 133.4 was reduced.

The regulatory agencies have agreed with the need to stop work on the following portions of the baseline HHRA for OUs 1, 2, 3, 4, 5, 6, and 7:

1. Aggregation of RI data for the purpose of comparing to background concentrations.
2. Selection of the COC for both ecological and baseline HHRA.
3. Aggregation of data for the purpose of conducting an exposure assessment.

Work has stopped until an agreement is reached among the parties to the IAG to guidance on the methodology for the baseline risk assessments and preparation of the RFI/RI Reports. Work stopped for OU 5 as of August 12, 1993. The effect of the work stoppage is minimal for OU 5 because the aggregation of data and selection of COC have not yet commenced. Other portions of the risk assessment including data evaluation, identification of exposure scenarios, selection of exposure parameters, and ecological affects assessment are proceeding as scheduled.

Comments on the draft TM #12, *Exposure Scenarios*, were returned by the regulatory agencies. The comments will be addressed; the final TM will be generated. The stop work order on the HHRA does not impact this TM. DOE and EG&G are concurrently reviewing and commenting on the draft TM #13, *Modeling*.

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Technical Memoranda

<u>Project</u>	<u>OU 5-Woman Creek Priority Drainage Remedial Investigation</u>
TM #1	
TM Title	Surface Water and Sediments
TM Status	When preparation is concluded or is estimated to be concluded: 30 Nov 92 Projected date of submittal to EPA/CDH: 30 Nov 92 Actual date of submittal: 13 Oct 92
TM #2	
TM Title	Surface Geophysics
TM Status	When preparation is concluded or is estimated to be concluded: 30 Nov 92 Projected date of submittal to EPA/CDH: 30 Nov 92 Actual date of submittal: 13 Oct 92
TM #3	
TM Title	Soil Sampling at IHSS 115
TM Status	When preparation is concluded or is estimated to be concluded: 07 May 93 Projected date of submittal to EPA/CDH: 07 May 93 Actual date of submittal: 26 Jan 93
TM #4	
TM Title	Soil Sampling at IHSS 133
TM Status	When preparation is concluded or is estimated to be concluded: 07 Jun 93 Projected date of submittal to EPA/CDH: 07 Jun 93 Actual date of submittal: 12 Apr 93
TM #5	
TM Title	Soil Gas Sampling at IHSS 115
TM Status	When preparation is concluded or is estimated to be concluded: 07 May 93 Projected date of submittal to EPA/CDH: 07 May 93 Actual date of submittal: 25 Mar 93
TM #6	
TM Title	Cone Penetrometer at IHSS 115
TM Status	When preparation is concluded or is estimated to be concluded: 14 Apr 93 Projected date of submittal to EPA/CDH: 14 Apr 93 Actual date of submittal: 25 Mar 93

**DOE, Rocky Flats Plant**

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TM #7  
TM Title Soil Borings at IHSS 133  
TM Status When preparation is concluded or is estimated to be concluded: 07 May 93  
Projected date of submittal to EPA/CDH: 07 May 93  
Actual date of submittal: 19 Feb 93

TM #8  
TM Title Monitoring Wells at IHSS 115  
TM Status TM 8, has been canceled, and has been replaced by a letter outlining the justification behind the location of the wells in IHSS 115

TM #9  
TM Title Monitoring Wells at IHSS 133, Ash Pits, Incinerator and Concrete Wash Pad  
TM Status When preparation is concluded or is estimated to be concluded: 14 May 93  
Projected date of submittal to EPA/CDH: 06 May 93  
Actual date of submittal: 06 May 93  
EPA/CDH comments scheduled: 11 Jun 93  
Actual date of submittal: 28 Jun 93

TM #10  
TM Title Soil Borings at IHSS 209  
TM Status When preparation is concluded or is estimated to be concluded: 06 Mar 93  
Projected date of submittal to EPA/CDH: 06 Mar 93  
Actual date of submittal: 06 Mar 93

TM #11  
TM Title Contaminants of Concern  
TM Status To be scheduled in FY94

TM #12  
TM Title Exposure Scenarios  
TM Status When preparation is concluded or is estimated to be concluded: 30 Jul 93  
Projected date of submittal to EPA/CDH: 15 Aug 93  
Actual date of submittal: 7 Jul 93

TM #13  
TM Title Modeling  
TM Status When preparation is concluded or is estimated to be concluded: 28 Jul 93  
Projected date of submittal to EPA/CDH: 24 Aug 93  
Actual date of submittal: N/A

TM #14  
TM Title Toxicity Assessment  
TM Status To be scheduled in FY94

**Planned Work for October**

- Deliver final TM #12, *Exposure Scenarios*, to the regulatory agencies.
- Deliver final TM #13, *Modeling*, to the regulatory agencies.
- Continue work on the Rocky Flats Environmental Database System (RFEDS) database.

**Problems** None

**Open Items** None

**2.6 OU 6 - WALNUT CREEK**

This activity encompasses assessment and remediation in the Walnut Creek Drainage of 21 IHSSs: A-series Detention Ponds, Ponds A-1 through A-4 (IHSS 142.1 through 142.4 and 142.12); the B-series Detention Ponds, Ponds B-1 through B-5 (IHSS 142.5 through 142.9); the North, Pond, and South Area Spray Fields (IHSS 167.1, 167.2 and 167.3); the East Area Spray Field (IHSS 216.1), the Trenches A, B and C (IHSS 166.1, 166.2 and 166.3); the Sludge Dispersal Area (IHSS 141); the Triangle Area (IHSS 165); the Old Outfall Area (IHSS 143). and the Soil Dump Area (IHSS 156.2).

Completion of field operations resulted in obtaining the following samples from the IHSSs in OU 6: stream sediment, pond sediment, surface soil, subsurface soil, stream water, pond water, and ground water.

Eleven new ground water monitoring wells, installed in OU 6 to supplement four existing wells, are being sampled each quarter for a minimum of 1 year. Geophysical surveys and radiation surveys were performed in selected areas to supplement the sampling activities.

The regulatory agencies have proposed a new IM/IRA on the operation of the RFP Ponds. If approved, this IM/IRA would affect the RFP ponds, including OU 6, placing them under CERCLA rather than the National Pollution Discharge Elimination System (NPDES).

**Scope of Work Changes This Period**            None

**Technical Approach Changes This Period**            None

<b>IAG Milestone Accomplishments</b>	Submit Draft Phase I RFI/RI Work Plan	19 Apr 91
	Submit Final Phase I RFI/RI Work Plan	16 Sep 91

**Future IAG Milestones Through FY94**

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Planned Extension Status</u>	<u>Accomplishment Date</u>
Submit Draft Phase I RFI/RI Report	4 Aug 94	10 Jun 94	21 Oct 94*
Submit Final Phase I RFI/RI Report	7 Jan 94	18 Nov 94	10 Jul 95*

\* TBD due to HHRA issues work stoppage.

**September Work Activity Status**            The regulatory agencies reviewed DOE's 11-month extension schedule request and concluded that there was good cause for a 10-month extension for the submittal of the OU 6 Draft and Final Phase I RFI/RI

Reports. DOE accepted the 10-month extension, and the new milestone delivery dates for submittal of the reports are June 10, 1994, and November 18, 1994.

The stop work order by EPA has prevented any significant amount of work to be accomplished on the TM #4, *COC*. TM #2, *Exposure Scenarios*, and TM #3, *Modeling Surface and Ground Water*, were submitted to the regulatory agencies and comments are pending. Until the regulatory agencies respond to TM #2 and TM #3, delays in the schedule will occur. The accumulation of these delays may affect the ability to meet the extended IAG Milestones.

Toluene has shown up in a high percentage of soil samples. The tape used to hold caps on the sample rings contained toluene. The manufacturer of the tape will not provide any information regarding the tape. Samples of the tape were analyzed by the 881 Laboratory and determined the existence of toluene.

Work continues on the RFEDS database tables to sort the data by IHSSs and contaminants and perform Quality Assurance (QA). Data comparisons will be made against the Background Geochemical Report and upper tolerance limits (UTLs) to determine the possibility of removing some of the IHSS from the remainder of the RI/FS process. Approximately 98 percent of the OU 6 data was analyzed by the laboratories.

The regulatory agencies have agreed with the need to stop work on the following portions of the baseline HHRA for OUs 1, 2, 3, 4, 5, 6, and 7:

1. Aggregation of RI data for the purpose of comparing to background concentrations.
2. Selection of the COC for both ecological and baseline HHRA.
3. Aggregation of data for the purpose of conducting an exposure assessment.

Work has stopped until an agreement is reached among the parties to the IAG concerning methodology for the baseline risk assessments and preparation of the RFI/RI Reports. Work stopped for OU 6 as of August 12, 1993. Other portions of the risk assessment including data evaluation, identification of exposure scenarios, selection of exposure parameters, and ecological effects assessment will proceed as scheduled.

**Technical Memoranda**

**Project**

**OU 6-Walnut Creek**

TM #1  
TM Title  
TM Status

Work Plan Modifications  
Approved by EPA: 08 Jan 93

TM #2  
TM Title  
TM Status

Exposure Scenarios  
When preparation is concluded or estimated to be concluded: 01 Jul 93  
Projected date of submittal to EPA/CDH: 01 Jul 93  
Actual date of submittal: 01 Jul 93  
Date when EPA/CDH comments received: N/A

TM #3  
TM Title  
TM Status

Modeling Surface and Ground Water  
When preparation is concluded or is estimated to be concluded: 01 Jul 93  
Projected date of submittal to EPA/CDH: 08 June 93  
Actual date of submittal: 08 June 93  
Date when EPA/CDH comments received: N/A

TM #4  
TM Title  
TM Status

Contaminants of Concern  
When preparation is concluded or is estimated to be concluded: 15 Dec 93  
Projected date of submittal to EPA/CDH: TBD  
Actual date of submittal: N/A  
Date when EPA/CDH comments received: N/A

TM #5  
TM Title  
TM Status

Toxicity Factors  
When preparation is concluded or is estimated to be concluded: 15 Dec 93  
Projected date of submittal to EPA/CDH: TBD  
Actual date of submittal: N/A  
Date when EPA/CDH comments received: N/A

**Planned Work for October**

- Continue to sort and analyze the OU 6 data.
- Obtain the HHRA methodology resolution from EPA and CDH.

**Problems**

Although work has stopped for the HHRA because of the stop work order, the TMs are expected to be delivered as scheduled. The TMs are affected by the HHRA and their schedules will be delayed.

**Open Items**

Work is stopped until an agreement is reached among the regulatory agencies and DOE regarding methodology for the baseline risk assessment and preparation of the RFI/RI Reports.



**2.7 OU 7 - PRESENT LANDFILL**

The Present Landfill - OU 7 is located north of the plant complex on the western edge of an unnamed tributary of North Walnut Creek and is comprised of two IHSSs. IHSS 114 includes landfill waste and leachate at the Present Landfill, soils beneath the landfill potentially contaminated with leachate, and sediments and water in the East Landfill Pond. IHSS 203 contains potentially contaminated soils at the Inactive Hazardous Waste Storage Area. A section of the Present Landfill located in the southwest corner was used between 1986 and 1987 as a temporary storage area for hazardous waste. The Present Landfill began operation in August of 1968 and was originally constructed to provide for disposal of RFP's nonradioactive and nonhazardous wastes. In September 1973, tritium was detected in leachate from the landfill. During the mid-1980s, extensive investigations were conducted on the waste streams (types) placed into the landfill; consequently, hazardous wastes/hazardous constituents were identified. Although currently operating as a nonhazardous sanitary landfill, the facility is considered an inactive hazardous waste disposal unit undergoing RCRA closure.

**Scope of Work Changes This Period**            None

**Technical Approach Changes This Period**            None

<b>IAG Milestone Accomplishments</b>	Submit Draft Phase I RFI/RI Work Plan	08 Jun 90
	Submit Final Phase I RFI/RI Work Plan	28 Aug 91

**Future IAG Milestones Through FY94**

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase I RFI/RI Report	12 Oct 93		20 Dec 93*
Submit Final Phase I RFI/RI Report	16 Mar 94		2 Sep 94*
Submit Draft Phase II RFI/RI Work Plan	13 Sep 94		7 Aug 95*

\*TBD due to HHRA issues work stoppage.

**September Work Activity Status**            Work continues on rescoping OU 7. The current strategy is as follows:

1. Use Colorado Hazardous Waste Act (CHWA) closure requirements and EPA presumptive remedy guidance to close the landfill. This allows immediate IM/IRA commencement.

2. Develop a risk-based criteria for the pond and surrounding soils, since no ARAR exist for soils.
3. Investigate and disposition ground water based upon ARAR.

The regulatory agencies were consulted regarding this strategy and agree with the proposed rescoping. A meeting among DOE, the regulatory agencies, and EG&G will be scheduled to define revised data quality objectives (DQOs) for the effort. Evaluation of current data is underway to scope additional field activities that may need to occur to support the above items.

An informal draft of the OU 7 rescoping proposal was reviewed and comments were incorporated. Scoping began on the modifications proposed. Regarding the issue of postponing the risk assessment until post closure, additional analysis is required. The regulatory agencies' initial position stated in the meeting was that ARAR should drive closure criteria. In addition, if ARAR were met, the site was considered closed without regard to risk. The issue is that ARAR do not cover soils; particularly, the soils around the pond area to be dispositioned on a risk-based method prior to closure of the landfill. Further discussions with the regulatory agencies on this issue are underway.

OU 7 continues partial data analysis, nature and extent evaluation. However, OU 7 continues to be impacted by the stop work order that halts the OU 7 schedule as of June 23, 1993. This freeze is specific to process development for methodologies to compare site-specific data to background levels for identification of COC.

The regulatory agencies have agreed with the need to stop work on the following portions of the baseline HHRA for OUs 1, 2, 3, 4, 5, 6, and 7:

1. Aggregation of RI data for the purpose of comparing to background concentrations.
2. Selection of the COC for both ecological and baseline HHRA.
3. Aggregation of data for the purpose of conducting an exposure assessment.

Work has stopped until an agreement is reached among the parties to the IAG for guidance on the methodology for the baseline risk assessments and preparation of the RFI/RI Reports. Work stopped for OU 7 as of June 21, 1993. Other portions of the risk assessment including data evaluation, identification of exposure scenarios, selection of exposure parameters, and ecological affects assessment will proceed as scheduled.

**Technical Memoranda**

**Project**

**OU 7 - Present Landfill**

TM #1  
TM Title  
TM Status

Exposure Scenarios  
Initial reviews completed by DOE/HQ and DOE. Review completed by EPA and CDH. Response summary developed and submitted to all parties for review. Reviews complete. Revised response summary completed 25 May 93, with a final review underway prior to transmittal to the agencies.

TM #2  
TM Title  
TM Status

Model Description.  
Transmitted to EPA and CDH for review: 08 Jan 93  
Initial review by EPA, CDH, and DOE completed: 30 April 93  
Draft response summary complete: 25 May 93

TM #3  
TM Title  
TM Status

Addendum to Final Phase I RFI/RI Work Plan. Surface Soil and Asbestos Pit Disposal Area Characterization Plan.  
Transmitted to DOE for review: 05 Feb 93  
Transmitted to the EPA and CDH for review: 08 Feb 93  
Comments received: 26 Apr 93  
Conditional approval by the EPA and CDH received: 22 Feb 93  
Clarification of outstanding comments from EPA and CDH received: 03 May 93

TM #4  
TM Title  
TM Status

Contaminants of Concern  
Under development

**DOE, Rocky Flats Plant**

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**Planned Work for October**

- Commence DQO development for revised OU 7 investigation with the regulatory agencies.
- Begin subcontract work for IM/IRA decision document, FSP revision and implementation, and long-range planning documentation.
- Begin summarization of nature and extent of contamination at OU 7, pending resolution of work stoppage issues.
- Submit proposed framework for rescoping OU 7 to the regulatory agencies.

**Problems**

A stop work order on portions of the baseline HHRA was received June 21, 1993. All downstream milestones associated with the baseline HHRA will be delayed.

**Open Items**

Work is stopped until an agreement is reached among the regulatory agencies and DOE to guidance on the methodology for the baseline risk assessment, methodology for comparison of site-specific data to background values for the purpose of identifying COC and preparation of the RFI/RI Reports.

**2.8 OU 8 - 700 AREA**

The 24 IHSSs that constitute OU 8 encompass separate sites inside and around the production area of the Rocky Flats Plant. Contamination sources within the various IHSSs include above ground and underground tanks, equipment washing areas, and releases inside buildings which potentially affected areas outside the buildings. Contaminants from these sources may have been introduced into the environment through spills on the ground surface, underground leakage and infiltration, and in some cases through precipitation runoff. The chemical composition of the contaminants also varies widely between the IHSSs, ranging from low-level radioactive mixed wastes to nonradioactive organic and inorganic compounds.

**Scope of Work Changes This Period**            None

**Technical Approach Changes This Period**            None

<b>IAG Milestone Accomplishments</b>	Submit Draft Phase I RFI/RI Work Plan	01 May 92
	Submit Final Phase I RFI/RI Work Plan	01 Dec 92

**Future IAG Milestones Through FY94**

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase I RFI/RI Report	14 Feb 94		02 Nov 15
Submit Final Phase I RFI/RI Report	12 Jul 94		19 Jul 16

**September Work Activity Status**

The final Health and Safety Plan (HSP) for implementation of nonintrusive field work for the Industrial Area Operable Units (IA OUs), OUs 8, 9, 10, 12, 13, and 14 completed EG&G signoffs and approvals. DOE comments are being incorporated into the HSP and will be transmitted on October 1, 1993.

A meeting among DOE, the regulatory agencies, and EG&G was held on September 29, 1993, to review comments on the proposed intrusive field work for FY94. The meeting involved review of the proposed ranking of the IA OUs IHSSs for potential linkage to decontamination and decommissioning (D&D) and the Transition Plan. The outcome of the meeting resulted in a plan to move forward on presentation of the D&D/Transition linkage and to quantify the intrusive field work for FY94.

The procurement package for implementation of the IA Environmental Evaluation (EE) was submitted to RFP Procurement on July 21, 1993. One EE will be conducted for the entire IA but will support the information required in the Phase I RFI/RI Work Plans for OUs 8, 9, 10, 12, 13, and 14. The implementation will be conducted by using the OU 9 EE TM. A memorandum requesting the issuance of a letter subcontract was sent to RFP Procurement on September 21, 1993. The issuance of a letter subcontract has become a necessity in order to meet the summer field sampling season. Collection of EE samples must occur before the hard winter frosts, which cause many plants to become dormant. RFP Procurement is awaiting approval of an Organizational Conflict of Interest (OCI) package from DOE. When this package is approved, RFP Procurement will award a letter subcontract to begin field work activities.

**Technical Memoranda**

None

**Planned Work for October**

- Complete responsiveness summary of comments made on the HSP.
- Field work for the IA OUs is scheduled to begin with OU 10 on October 20, 1993. A practice run for surface soil sampling is scheduled for October 13, 1993. The practice run will allow review of the HSP and SOP compliance.
- Begin field work for the IA OU EE by October 8, 1993.

**Problems**

None

**Open Items**

None

**3.9 OU 9 - ORIGINAL PROCESS WASTE LINES**

This activity involves characterizing a series of tanks and associated process waste lines. The original process waste lines (OPWL) consisted of 35,000 feet of buried pipeline that transferred process wastes from production buildings to onsite treatment plants. A system of 60 designated pipe section, 46 storage tank sites, and 3 other areas of suspected process waste leakage are included in OU 9. The system was placed into operation in 1952, and additions were made to the system through 1975. The original system was replaced over the 1975-1983 period by the new process waste system. Some tanks and lines from the original system were incorporated into either the new process waste system or the fire water deluge collection system.

The original system is known to have transported or stored various aqueous process wastes containing low-level radioactive materials, nitrates, caustics, and acids. Small quantities of other liquids were also introduced in the system, including medical decontamination fluids, miscellaneous laboratory liquids, and laundry effluent. The RFI/RI plan includes inspection and sampling of the OPWL tanks and pipelines that are accessible and soil sampling to determine the extent of contamination in the vadose zone. The soil sampling will be performed by installing test pits and boring where known or suspected releases occurred, near pipe joints and valves, at approximately 200-foot intervals along the pipelines, and by installing borings around the outdoor tanks. Soil characterization studies will determine the need for soil removal and/or treatment. The results of the RFI/RI will determine the need for interim and/or final remediation action.

**Scope of Work Changes This Period**                      None

**Technical Approach Changes This Period**                      None

<b>IAG Milestone Accomplishments</b>	Submit Draft Phase I RFI/RI Work Plan	08 Jun 90
	Submit Final Phase I RFI/RI Work Plan	26 Nov 91

**Future IAG Milestones Through FY94**

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase I RFI/RI Report	11 Apr 94		04 Jan 01
Submit Final Phase I RFI/RI Report	06 Sep 94		16 Sep 03

Review of the first draft of TM #1, *Field Sampling Plan, Part 1 Outside Tanks*, is underway. The approval is being expedited for the soil sampling plan around the exterior tanks. Soil samples should be collected and shipped expeditiously.

DOE received a letter from CDH requesting that RFP characterize 11 active process waste tanks. DOE and EG&G plan to work together in identifying options and responding to the request from CDH. This issue may affect the content of TM #1.

**Technical Memoranda**

**Project**

**OU 9-Original Process Waste Lines**

TM #1

TM Title

TM Status

Stage 1 Field Sampling Plan

When preparation is concluded or is estimated to be concluded: Sep 93

Projected date of submittal to EPA/CDH: Sep 93

Actual date of submittal: N/A

Date when EPA/CDH comments received: N/A

**Planned Work for October**

- Complete and submit TM #1, *Field Sampling Plan - Volume 1*, dealing with outside tanks.

**Problems**

None

**Open Items**

None

**3.10 OU 10 - OTHER OUTSIDE CLOSURES**

OU 10 is made up of 15 IHSSs scattered throughout the plant, which consist of various hazardous waste units. Six of the IHSSs are located in the PA, two are located in the buffer zone near the present landfill, and the remaining IHSSs are located near various buildings throughout the plant. The types of wastes identified at these sites range from pondcrete/saltcrete storage and drum storage to a utilization yard with waste spills. A Final Phase I RFI/RI Work Plan is currently in preparation. The primary components of the RFI/RI Work Plan for OU 10 will be an FSP, Baseline Risk Assessment Plan (BRAP) and an EE Work Plan.

**Scope of Work Changes This Period**            None

**Technical Approach Changes This Period**            None

<b>IAG Milestone Accomplishments</b>	Submit Draft Phase I RFI/RI Work Plan	27 Nov 91
	Submit Final Phase I RFI/RI Work Plan	01 May 92

**Future IAG Milestones Through FY94**

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase I RFI/RI Report	25 Aug 94		02 Nov 15

**September Work Activity Status**            The IA/HSP was signed and approved by the regulatory agencies, DOE, and EG&G. Additional DOE comments will be addressed by October 1, 1993.

Soil disturbance permits were submitted to EG&G Construction Management. This would allow the subcontractor to move ahead with the surficial soil sampling program for OU 10.

No approval was granted by EG&G/Safeguards and Security for access to the Protected Area (PA) by the HPGe detector vehicle. Both EG&G and Wackenhut Services, Inc., are involved in this issue. No work can proceed on the gamma surveys in the PA until the access issue is resolved. DOE will help facilitate entry into the PA. In the meantime, the HPGe crews are collecting radiological survey data in support of the OU 11 rescoping effort. Initial evaluation of Phase I HPGe

survey data, outside the PA, was completed for OUs 8, 10, 12, 13, and 14. No additional radioactivity was detected by the ground based HPGe. This supports the data collected during aerial surveys of the IA conducted 2 years ago. However, additional HPGe data collection analysis may be needed in order to more fully characterize each IHSS in the IA.

A Memorandum of Understanding (MOU) is being drafted regarding the removal of materials stored in or around OU 10 IHSSs.

**Technical Memoranda**

No TMs have been developed for OU 10. The first TM for OU 10 will be for the nonintrusive field work, tentatively scheduled to be completed in March 1994.

**Planned Work for October**

- Complete nonradiological surface soil sampling in unpaved areas.
- Begin soil gas surveys in IHSS 170, 174 and 176.
- Complete HPGe surveys in PA.

**Problems**

The HPGe is needed in the PA to conduct IA OU 10 field work. Access to the PA by the HPGe was delayed because of security regulations, and this could have impacts to the schedule. The RFP is actively working to resolve this problem.

**Open Items**

None

**3.11 OU 11 - WEST SPRAY FIELD**

The West Spray Field is located within the Rocky Flats Plant buffer zone immediately west of the plant security area. The West Spray Field was in operation from April 1982 to October 1985. During operation, excess liquids from solar evaporation ponds 207-B North and Center (contaminated ground water in the vicinity of the ponds and treated sanitary sewage effluent) were pumped periodically to the West Spray Field for spray application. The spray field boundary covers an area of approximately 105.1 acres, 38.3 of which received direct application of hazardous waste. The RFI/RI process will entail field studies to investigate the presence or absence of hazardous constituents in soil and ground water.

**Scope of Work Changes This Period**      None

**Technical Approach Changes This Period**      None

<b>IAG Milestone Accomplishments</b>	Submit Draft Phase I RFI/RI Work plan	08 Jun 90
	Submit Final Phase I RFI/RI Work plan	02 Jan 92

**Future IAG Milestones Through FY94**

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase I RFI/RI Report	20 Sep 94		18 Apr 95

**September Work Activity Status**

Initial HPGe radionuclide field screening data was analyzed and the results show no detectable plutonium or americium at the West Spray Field. This data were formatted and incorporated into TM #1, *Revised Field Sampling Plan and Data Quality Objectives*, which revises the OU 11 FSP and provides excellent supporting evidence to eliminate surface soil sampling. The TM to revise the OU 11 FSP was completed.

The Ecology and NEPA Division (END) continues work at OU 11, and has sampled soils for nitrate content for ecological purposes. This information will also be useful to substantiate the decision to eliminate surface soil sampling at OU 11.

The proposal to combine the two phases of OU 11's FSP was concurred with by the regulatory agencies. Furthermore, it was recommended that OU 11 be

rescoped to be an IM/IRA/Closure Plan. This recommendation will be examined and compared with the original idea to follow the IAG schedule and delete milestones that do not apply. The regulatory agencies agree to this evaluation and will approve the plan that is the most schedule and cost effective. These issues and resolutions will be documented by the regulatory agencies.

**Technical Memoranda**

**Project**

**OU 11 - West Spray Field**

TM #1

TM Title

Revised Field Sampling Plan and Data Quality Objectives.

TM Status

Under development

HHRA Technical Memoranda is scheduled to begin in FY94

**Planned Work for October**

- Complete review of TM #1, *Revised FSP and DQO*.
- Complete the HPGe survey.
- Complete ecological evaluation field work.

**Problems**

None

**Open Items**

None

**2.12 OU 12 - 400/800 AREA**

The 400/800 Area involves assessment and remediation of the 10 IHSSs at the 400/800 Area: Multiple Solvent Spills at the West and South Loading Dock Areas (IHSSs 116.1 and 116.2); Fiberglassing Areas North and West of Building 664 (IHSSs 120.1 and 120.2); Cooling Tower Ponds - north, east, south, and west of Building 460 (IHSSs 136.1, and 136.2); Building 881 - Conversion Site(147.2); Radioactive Site - South Area (IHSS 157.2); Acid Leaks (2) (IHSS 187); and Multiple Acid Spills (IHSS 189).

Assessment will consist of preparing a Phase I RFI/RI Work Plan, which will include both an EE and a HHRA. After implementation of this Work Plan, field work and sample analysis will be conducted, data will be analyzed, and the Phase I RI Report will be prepared. A Phase II Investigation may be performed as necessary. An FS to determine the best methods to remediate the area will be conducted as part of the assessment.

Remediation will consist of development and execution of a Remedial Action Plan based on results obtained during the assessment phase of the project. This process includes review and approval by the regulatory agencies, followed by a Record of Decision (ROD), release to the public, and implementation of the plan.

**Scope of Work Changes This Period**            None

**Technical Approach Changes This Period**            None

<b>IAG Milestone Accomplishments</b>	Submit Draft Phase I RFI/RI Work plan	08 May 92
	Submit Final Phase I RFI/RI Work plan	05 Oct 92

**Future IAG Milestones Through FY94**

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase I RFI/RI Report	20 Apr 94		11 Mar 99
Submit Final Phase I RFI/RI Report	15 Sep 94		17 Nov 99

**September Work Activity Status**            The HSP was approved and all DOE comments were incorporated. The soil permits are expected in October 1993. Surficial soil sampling for OU 12 is anticipated to begin November 1993.

Site walks in the PA and the exclusion area are planned for October 1993. IHSS overlaps are being identified. Site walks of OU 10 and OU 12 were conducted on September 21, 1993.

All Stage I HPGe survey data, outside of the PA, were collected for OUs 10, 12, 13, and 14. The portions of OU 8 outside of the PA were surveyed. The survey data is currently being analyzed. Results from this data evaluation will provide direction for future HPGe and sodium iodide survey points.

**Technical Memoranda**

None

**Planned Work for October**

- Begin surficial soil sampling in paved areas.

**Problems**

The delay in awarding the contract has pushed the field work schedule by approximately 11 weeks. The implementation of the IA/OU field work is being expedited to try and recover some of the delay. The total impact on FY93 and FY94 activities is being evaluated.

**Open Items**

OU 12 requested a milestone extension of the Draft RFI/RI Report due on April 20, 1994 and the Final RFI/RI Report due on September 15, 1994.

Request for the Draft RFI/RI Report milestone extension is pending.

**2.13 OU 13 - 100 AREA**

Cleanup of the 100 Area involves the assessment and remediation of 14 IHSSs: Chemical Storage - North, Middle, and South Sites (IHSSs 117.1, 117.2 and 117.3); Oil Burn Pit #1 (IHSS 128); Lithium Metal Destruction Site (IHSS 134); Waste Spills (IHSS 148); Fuel Oil Tank (IHSS 152); Radioactive Site - North Area (IHSS 157.1); Radioactive Site - Building 551 (IHSS 158); Waste Peroxide Drum Burial (IHSS 169); Solvent Burning Ground (IHSS 171); Valve Vault 12 (IHSS 186); Caustic Leak (IHSS 190); and the Hydrogen Peroxide Spill (IHSS 191), and the Scrap Metal Site (IHSS 197).

Assessment will consist of preparing a Phase I RFI/RI Work plan, which will include both an EE and an HHRA. After implementation of this Work Plan, field work and sample analysis will be conducted, data will be analyzed, and the Phase I RI Report will be prepared. A FS to determine the best methods to remediate the area will be conducted as part of the assessment.

Remediation will consist of development and execution of a Remedial Action Plan based on results obtained during the assessment phase of the project. This process includes review and approval by the regulatory agencies, followed by a ROD, release to the public, and implementation of the plan.

**Scope of Work Changes This Period**      None

**Technical Approach Changes This Period**      None

<b>IAG Milestone Accomplishments</b>	Submit Draft Phase I RFI/RI Work plan	15 May 92
	Submit Final Phase I RFI/ RI Work plan	12 Oct 92

**Future IAG Milestones Through FY94**

<u>Milestone Name</u>	<u>Planned IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Accomplishment Date</u>
Submit Draft Phase I RFI/RI Report	8 Aug 94		24 Mar 99

**September Work Activity Status**      Work continues on developing an action plan to update the SOP situation. A draft action plan was received by DOE on September 13, 1993. The SOPs include:

5-21000-OPS	GT.22	IN SITU SAMPLING WITH BAT SYSTEM
5-21000-OPS	GT.25	SEQUENTIAL EXTRACTION FOR SOIL ANALYSIS*
5-21000-OPS	GT.26	DETERMINATION OF HYDRAULIC CONDUCTIVITY USING A TENSION* INFILTROMETER

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5-21000-OPS	GT.27	AUTONOMOUS OPERATIONS OF GLOBAL POSITIONING EQUIPMENT
5-21000-OPS	GT.28	DIFFERENTIAL PROCESSING OF GLOBAL POSITIONING EQUIPMENT
5-21000-OPS	GT.29	REAL-TIME DIFFERENTIAL OPERATION OF GLOBAL POSITIONING EQUIPMENT
5-21000-OPS	GT.30	IN SITU CHARACTERIZATION OF RADIONUCLIDES USING HPGE DETECTORS
5-21000-OPS	GT.31	DETERMINING MATRIX POTENTIAL USING SOIL MEASUREMENT SYSTEM TENSIMETERS
5-21000-OPS	GT.32	BULK DENSITY MEASUREMENTS OF SOIL
5-21000-OPS	GT.33	PROCEDURE FOR USING THE DOUBLE-RING INFILTRMETER
5-21000-OPS	GT.34	GUELPH PERMEAMETER
5-21000-OPS	GT.35	PROCEDURE FOR DIELECTRIC WATER CONTENT MEASUREMENT
5-21000-OPS	GT.36	PROCEDURE FOR THE DETERMINATION OF BULK DENSITY
5-21000-OPS	GT.37	PROCEDURE FOR NEUTRON MOISTURE LOGGING
5-21000-OPS	GT.38	PROCEDURE FOR LYSIMETER INSTALLATION AND SAMPLING

\*Procedures GT.25 and GT.26 were approved by the regulatory agencies.

The subcontractor was given a data file of HPGe readings. Only two areas showed detectable activity: (1) the area around the RCRA storage area in IHSSs 117.1, 177.2 and 197; and (2) the area along Central Avenue. It appears that these readings may be "shine" from other areas that appear on the 1990 aerial survey. The surficial soil sampling plan will include samples from these areas to confirm this hypothesis. A soil disturbance permit was issued/modified on September 28, 1993, to construct a small drainage ditch along the boundaries of IHSSs 158 and 117.2.

RFP has completed an initial analysis of HPGe screening at OU 13. The analysis is a statement of the HPGe results and how they relate to the surficial soil sampling and vertical profile sampling locations per the OU 13 Work Plan. A meeting will be scheduled with the regulatory agencies to finalize sampling locations.



**2.14 OU 14 - RADIOACTIVE SITES**

Work at the "Radioactive Sites" involves the assessment and remediation of eight IHSSs: Radioactive Site - 700 Area Site #1 and Site #2 (IHSS 131); Radioactive Soil Burial - Building 334 Parking Lot and Soil Dump Area (IHSSs 156.1); Building 444 Parking Lot (IHSS 160) and Building 664 (IHSS 161); and Radioactive Site - 700 Area Site #2 (IHSS 162); and Radioactive Sites - 800 Area which includes the Concrete Slab, Building 886 Spills, and the Building 889 Storage Pad (IHSSs 164.1, 164.2, and 164.3). In 1991, one of two Soil Dump Area IHSSs (156.2) was deleted from OU 14 and added to OU 6.

Assessment will consist of preparing a Phase I RFI/RI Work Plan, which will include both an EE and an HHRA. After implementation of this work plan, field work and sample analysis will be conducted, data will be analyzed, and the Phase I RI Report will be prepared. An FS to determine the best methods to remediate the area will be conducted as a subsequent phase to the assessment phase.

Remediation will consist of development and execution of a Remedial Action Plan based on results obtained during the assessment phase and feasibility study of the project. This process includes review and approval by EPA and CDH, followed by a ROD, release to the public, and implementation of the plan.

**Scope of Work Changes This Period**            None

**Technical Approach Changes This Period**            None

<b>IAG Milestone Accomplishments</b>	Submit Draft Phase I RFI/RI Work Plan	26 Jun 92
	Submit Final Phase I RFI/RI Work Plan	19 Oct 92

**Future IAG Milestones Through FY94**            None

**September Work Activity This Period**            Response to comments and revisions to the draft Surficial Soil Sampling SOP continued. DOE received the revised draft Surficial Soil Sampling SOP, GT.08, after responses to EPA's comments were incorporated.

The Final OU 14 Phase I RFI/RI Work Plan was submitted to the regulatory agencies on October 19, 1992. DOE will send a letter to EPA requesting a status on the approval of this report.

**DOE, Rocky Flats Plant**

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**Technical Memoranda**

The current Five-Year Plan (FYP) indicates TM #1, *Human Health Risk Assessment-Exposure Assessment*, and TM #2, *Human Health Risk Assessment-Modeling*, are scheduled for completion in March 1994. These tasks will require rescheduling due to the integration of OUs 8, 9, 10, 12, 13, and 14. Currently, only nonintrusive RI field work is scheduled for OU 14 in FY94. Preparation of the TMs will not begin until FY95.

A nonintrusive TM will be prepared in FY94 summarizing the nonintrusive field work and recommending Stage II activities for the remedial investigation intrusive field work.

**Planned Work for October**

- Begin HPGe radiological surface surveys inside the PA.
- Confirm Surface Soil Sampling sites.
- Transmit letter seeking status approval of the OU 14 Work Plan.
- Review the consistency review of the DQO in the OU 14 Work Plan.

**Problems**

The current FYP indicates TM #1, *Human Health Risk Assessment-Exposure Assessment*, and TM #2, *Human Health Risk Assessment-Modeling*, are scheduled for completion in March 1994. These tasks will require rescheduling due to the integration of OUs 8, 9, 10, 12, 13, and 14. Currently, only nonintrusive RI field work is scheduled for OU 14 in FY94. Preparation of the TMs will not begin until FY95.

**Open Items**

The OU 14 Final Phase I RFI/RI Work Plan is still pending approval.

## **2.15 OU 15 - INSIDE BUILDING CLOSURES**

OU 15 is composed of seven IHSSs: IHSS 178, Building 881 - Drum Storage Area; IHSS 179, Building 865 - Drum Storage Area; IHSS 180, Building 883 - Drum Storage Area; IHSS 204, RCRA Unit 45 - Original Uranium Chip Roaster; IHSS 211, RCRA Unit 26, Building 881 - Drum Storage Area; IHSS 212, RCRA Unit 63, Building 374 Drum Storage Area; and IHSS 217, RCRA Unit 32, Building 881 - Cyanide Bench Scale Treatment. The seven IHSSs currently have interim status under RCRA.

Closure Plans for the IHSSs were submitted to CDH during 1988 and 1989. The IHSSs were also included within the IAG to undergo a RCRA Facility Investigation/Remedial Investigation (RFI/RI). During scoping meetings for preparation of the Phase I RFI/RI Work Plan for Operable Unit No. 15 conducted between EPA, CDH and DOE during April 1992, the Closure Plan and RFI/RI Processes were combined. In affect, Clean Closure Performance Standard (6 CCR 1007-3, Part 265.111) will serve as the Applicable or Relevant and Appropriate Requirements for the OU 15 RFI/RI inside buildings and Closure Plans will no longer be prepared. The public comment period required for the Closure Plan process will be fulfilled through the IM/IRA process of the IAG.

Drums containing solids and liquids were stored at the OU 15 IHSSs. Types of waste included oils, coolants and solvents containing chlorinated hydrocarbons (RCRA F001 and F002 wastes) and waste paints and waste metals contaminated with solvents. Hazardous constituents include chlorinated solvents, beryllium, and uranium. The major activity proposed is characterization of contamination associated with the OU 15 IHSSs both inside and outside buildings and, if applicable, decontamination of the concrete floors at the indoor facilities and remediation of contamination outside buildings.

During April 1992, IHSS 215, Unit 55.13-Tank T-40, was deleted from OU 15 and added to OU 9 as part of a IHSS realignment pursuant to Part 32, Paragraph 191 (Additional Work or Modification to Work) of the IAG. This change was recommended by DOE in the OU 9 Phase I RFI/RI Work Plan approved by CDH and EPA in April 1992. Similarly, IHSS 212, RCRA Unit 63 was removed from the OU 15 RFI/RI process since it is currently active as a Drum Storage Area and has been included in the Rocky Flats Plant RCRA Part B TRU Mixed Waste permit application.

**Scope of Work Changes This Period**            None

**Technical Approach Changes This Period**            None

<b>IAG Milestone Accomplishments</b>	Submit Draft Phase I RFI/RI Work Plan	01 Jun 92
	Submit Final Phase I RFI/RI Work Plan	26 Oct 92

**DOE, Rocky Flats Plant**

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**Future IAG Milestones  
Through FY94**

<u>IAG Date Milestone Name</u>	<u>Planned Extension Scheduled</u>	<u>Accomplishment Status</u>	<u>Date</u>
Submit Draft Phase I RFI/RI Report	1 Aug 94		1 Aug 94

**September Work Activity  
Status**

The September 30, 1993, Work Package Milestone, OU 15 Field work Status Report, was submitted on schedule.

Field work within Building 447 was delayed because the lack of Radiological Protection Technician (RPT) resources. A Radiological Worker Permit (RWP) was obtained in September 1993 and field work will begin October 1, 1993. The completion of OU 15 field work is scheduled the week of October 11, 1993.

A potential conflict exists between OU 15 field work within Building 447 and waste characterization work required by NTS. Work for both OU 15 and NTS within Building 447, Room 32 (IHSS 204, Original Uranium Chip Roaster) was scheduled for initiation during September 1993. Drums of uranium oxide waste produced during use of the Original Uranium Chip Roaster will be sampled within Room 32, which is where OU 15 environmental sampling will be conducted. Although OU 15 field work will be delayed while the oxide samples are obtained for NTS RCRA characterization, the delayed samples for OU 15 can be rushed with respect to chemical analyses in order to make up the schedule delay. In addition, chemical analyses results from oxide sampling will be available for the OU 15 Phase I RFI/RI Report and will be valuable information with regard to closure of IHSS 204 as a RCRA Unit.

It is assumed that the results of Stage III field work (outside buildings) will not be presented within the OU 15 Draft Phase I RFI/RI Report. A new schedule for OU 15 may be provided for regulatory agency review and approval within Field Sampling TM #1, which will include Stage III field work results, if necessary. A well defined scope of work for Stage III field work (outside buildings) based on the results of Stage I and Stage II field work (inside buildings) will be available for inclusion in TM #1, once a new schedule can be based on the scope of work. TM #1 is scheduled to be submitted to the regulatory agencies during FY94. In order to expedite

the OU 15 schedule, the regulatory agencies, DOE/HQ, DOE/RFO, and EG&G will concurrently review TM #1.

QA began an informal review of OU 15 field work. This involved a review of the FSP in the Work Plan and will involve a visual inspection of the field work, primarily the floor/equipment hot water rinsate sampling.

**Technical Memoranda**

Preparation of the FSP TM and the HHRA TM is not anticipated to begin until completion of Stage I and II field work during FY94.

**Planned Work for October**

- Complete Stage I and II field work inside building.

**Problems**

Field work within Building 447 was delayed because of the lack of RPT resources.

**Open Items**

None

**2.16 OU 16 - LOW PRIORITY SITES**

This assessment activity consists of preparing a "No Further Action Justification Document" for seven IHSSs: Solvent Spill, Antifreeze Discharge, Steam Condensate Leaks (400 and 700 Areas), Nickel Carbonyl Disposal, Water Treatment Plant Backwash Pond, and Scrap Metal Sites. In addition, the draft document must be reviewed, comments resolved, and the draft finalized.

**Scope of Work Changes This Period**            None

**Technical Approach Changes This Period**            None

<b>IAG Milestone Accomplishments</b>	Submit Draft No Further Action Justification Document	04 Mar 92
	Submit Final No Further Action Justification Document	30 July 92
	Submit Revised Final NFAJ Document	16 Oct 92

**Future IAG Milestones Through FY94**            None

**September Work Activity Status**            DOE sent the revised draft Final Proposed Plan (PP) to EG&G. The document incorporated previous comments by EG&G and accurately reflects the current status of the OU. The document will require concurrent review by DOE and EG&G. The EPA requested comments be forwarded to them by October 1, 1993, to meet the following schedule:

- October 6, 1993    - deadline for EPA finalizing the PP based on any comments received by October 1, 1993
- October 12, 1993    - Final PP mailed to the community reading rooms
- October 19, 1993    - public comment period begins for a sixty (60) day duration
- November 16, 1993    - public hearing
- December 17, 1993    - end of the public comment period

**Technical Memoranda**            None

**Planned Work for  
October**

- Finalize the PP/Draft RCRA Permit Modification.
- Distribute the PP to the community reading rooms.
- Begin the Public Comment Period.

**Problems**

The Activity Data Sheets (ADS) and FYP for OU 16 indicate no available funding for FY94 because the submittal of the No Further Action Justification (NFAJ) document was the final project task.

**Open Items**

The administrative Record of Decision (ROD) process will extend into FY94. A document was drafted to reflect the scope of work and resources required to complete the planned activities.

**2.17 SITEWIDE ACTIVITIES**

Sitewide activities include several tasks that encompass a wide variety of plans, procedures, reports, studies, and other activities required by the IAG and that apply to RFP environmental restoration activities in general. The activities include, but are not limited to, the HSP, a Sampling and Analysis Plan, a Plan for Prevention of Contaminant Dispersion, the Community Relations Plan, the Discharge Limits for Radionuclides Work Plan, Treatability Study deliverables, the Background Study Plan, Administrative Record, State Response (support for CDH oversight), Historical Release Report, Operations Management, Decontamination Facilities, Contractor yard support, ER Waste handling facilities, geologic characterization, hydrogeologic characterization, and ground water monitoring.

**Scope of Work Changes This Period**      None

**Technical Approach Changes This Period**      None

<b>IAG Milestone Accomplishments</b>	Submit Draft Background Study Report (Water)	15 Dec 89
	Submit Draft Background Study Report (Soils)	15 Dec 89
	Submit Draft Community Survey Plan	23 Jan 90
	Submit Final Community Survey Plan	22 Mar 90
	Submit Draft Health and Safety Plan	15 Aug 90
	Submit Draft Quality Assurance Project Plan	29 Aug 90
	Submit Draft Standard Operating Procedures	29 Aug 90
	Submit Draft Plan for Prevention of Contaminant Dispersion	19 Sep 90
	Submit Draft Treatability Study Plan	21 Sep 90
	Submit Draft Community Relations Plan	01 Nov 90
	Submit Final Health and Safety Plan	12 Nov 90
	Submit Revised Background Study Report	21 Dec 90
	Submit Final Community Relations Plan	22 Jan 91
	Submit Final Quality Assurance Project Plan	01 Mar 91
	Submit Final Standard Operating Procedures	01 Mar 91
	Submit Draft Radionuclides Discharge Limits Plan	05 Apr 91
	Submit Community Relations Plan Responsiveness Summary	21 Jun 91
Submit Final Treatability Study Plan	03 Jun 91	

Submit Final Plan for Prevention of Contaminant Dispersion	22 Jul 91
Submit Final Plan Discharge Limits Radionuclides	16 Sep 91
Submit Final PPCD and Responsiveness Summary	25 Nov 91
Submit Draft Historical Release Report	08 Jan 92
Submit Responsiveness Summary for DLRP	31 Jan 92
Submit Final Historical Release Report	03 Jun 92
Submit Annual Treatability Study Report	08 Mar 93

**Future IAG Milestones Through FY94**

None

**September Work Activity Status**

**Sitewide Treatability Studies**

**Annual Report** - The Sitewide Treatability Studies Annual Report is an IAG milestone. The annual report includes: a summary of the status of each of the sitewide projects, a literature review of new and emerging technologies, and a summary of other relevant environmental projects at RFP. The final report for FY92 was delivered to the regulatory agencies on March 8, 1993. The subcontract is in place and a scope meeting with the subcontractor is scheduled in the near future to initiate effort for the preparation of the annual report for FY93. The contract to prepare the FY93 Annual Report is scheduled to be effective on October 1, 1993.

**Superfund Innovation Technology Evaluation (SITE) Demonstration** - The DOE and EPA presented a SITE demonstration of the Colloid Polishing Filter Method (CPFM) at RFP from September 13 through September 17, 1993. The purpose of the demonstration was to determine how effectively the CPFM technology removes certain radionuclides from ground water. On September 15, 1993, a Visitor's Day was held for RFP personnel and the community. This demonstration consisted of a general plant tour of RFP and a viewing of the technology site, accompanied by a briefing about the SITE demonstration technology. The EPA SITE project has highest priority in the ER Sitewide Treatability Program.

**Inductively Coupled Plasma Mass Spectrometer (ICP-MS)** - The Sitewide Treatability Studies Program contains funding to purchase and install an ICP-MS in the treatability laboratory in Building 881. The addition of

this equipment will significantly increase the analytical capability of the laboratory and will result in lower analytical expenses and quicker turnaround times for treatability studies conducted in the future. The ICP-MS was delivered to RFP, and the utility package to upgrade the electrical capability and the duct work was submitted for review.

**Soil Washing Demonstration (NRT) - Nuclear Remediation Technologies (NRT)** proposed to test its proprietary soil washing process on a sample of RFP plutonium contaminated soil. The test work was carried out with no charge to RFP, other than the costs for obtaining and shipping the soil sample and EG&G to witness the test work. Preliminary results show that the flotation step reduced the activity in the soil by about one half. The sample used in the flotation test showed an activity of 19 pCi/g before the flotation and an activity of 9.8 pCi/g after flotation. Thus, removing the organic material contained in the soil reduced the radioactive activity by 50 percent. Subsequent leaching of the remaining soil with nitric acid or a halogen solution reduced the activity to 1.65 and 3.81 pCi/g. Sample recovery was 87 percent for the nitric acid leach and 93 percent for the halogen leach. Overall, the combined treatment process reduced the activity from approximately 19 pCi/g to as low as 1.65 pCi/g, a 90+ percent reduction in activity. However, this still did not reach the state's suggested goal of 0.9 pCi/g. A letter/report summarizing the results of the test work performed by NRT was received by EG&G. However, the information provided was inconclusive and additional information has been requested from NRT. NRT will perform additional testing.

**Interim Measures/Interim Remedial Action Plan (IMIRAP) -** The technical evaluations for the Phase II Geologic Characterization Data Acquisition are complete and a subcontractor recommendation was submitted to RFP Procurement. It is expected that the subcontractor award will be completed by October 1, 1993. Matrix support requests are being prepared to secure technical support for the project.

**Industrial Area Operable Units (8, 9, 10, 12, 13 and 14) -** On September 15, 1993, a meeting was held among the regulatory agencies, DOE, and EG&G to discuss the IA OUs implementation schedule and scope for intrusive activities. The purpose of the meeting was to review the justification of each IHSS for performing intrusive field work in FY94 and to provide an update on the current nonintrusive field work efforts.

An IA OU meeting among the regulatory agencies, DOE, and EG&G was held on September 23, 1993. The topic of the meeting was to present data collected from the HPGe surveys to date for OUs 8, 10, 12, 13, and 14. The schedule for field implementation of surficial soil sampling and other nonintrusive field work was discussed. This meeting was the first biweekly meeting among the regulatory agencies, DOE, and EG&G.

On September 29, 1993, a meeting was held among the regulatory agencies, DOE, and EG&G to review comments on the proposed intrusive field work for FY94. The proposed ranking of the IA OUs IHSSs for potential linkage to D&D and the Transition Plan were discussed. The outcome of the meeting will result in a formalized plan to move forward on presentation of the D&D/Transition linkage and to quantify the intrusive field work for FY94.

The HPGe unit completed work on OU 8 IHSS 172. The remaining work for the HPGe unit for the IA OUs is within the PA. Permits to authorize ingress and egress of the HPGe unit were completed; however, the computer equipment associated with the HPGe that needs to be brought into the PA has caused a delay. This delay for access is expected to take 2 to 3 weeks for resolution. The HPGe team will begin collecting information on OU 11. An area of OU 11 was identified to start HPGe readings and is expected to take 2 weeks to complete. This activity in OU 11 will avoid unnecessary downtime for the HPGe.

**Community Relations** - On September 27, 1993, DOE and EG&G presented an ER Update to the Technical Review Group (TRG).

The Environmental Quarterly Meeting was held on September 28, 1993. The surface water video was shown with demonstrations available from the EG&G Surface Water Division.

The RFP Electronic Community Bulletin Board System (BBS) is on-line. The BBS provides public access to documents relating to the environmental restoration of the RFP. Anyone who has a computer with a phone modem should be able to gain access to the RFP BBS. Features include: an index of other government bulletin boards, a listing of metropolitan area reading rooms and their documents, upcoming public meetings, the ER Program Monthly Report, and ER fact sheets. Future documents will concern the transition of the RFP. The phone number to access the BBS modem is 966-9103.

**Planned Work for  
October**

- Continue updates on Administrative Record (AR).
- Continue Community Relations activities.

**Problems**

None

**Open Items**

None

**SECTION 3. ROUTINE ENVIRONMENTAL MONITORING**

The following generalized sampling schedule for Routine Environmental Monitoring is provided as requested in Section 210 of the IAG. Detailed quarterly monitoring schedules are prepared in advance and are available to EPA and CDH upon request from the Environmental Management Department and EG&G Rocky Flats, Inc. The schedules are lengthy; therefore, they are not reproduced here. An EPA- or State-authorized representative may make arrangements to observe field work and to obtain split or duplicate samples.

**3.1 SURFACE WATER AND SEDIMENTS**

- Each of the Surface Water Stations (approximately 20 stations) are sampled quarterly.
- Each of the Sediment Stations (approximately 10 stations) are sampled quarterly.
- Each surface water and sediment sample is analyzed for the following parameters:

CLP TCL VOA	Radionuclides
Metals CLP TAL & Non-TAL	Temperature
Field Parameters	TDS/TSS
Specific Conductivity	pH
Dissolved Oxygen (DO)	Nutrients
Major Anions	

- Additionally, sediment samples are analyzed for: CLP-Semi VOAs, CLP-Pesticides/PCBsHerbicides-619

**3.2 SOILS**

- Each of the Soil Stations (located at 1- and 2-mile radii from the plant center) are sampled annually.
- Each soil sample is analyzed for plutonium and americium.

**3.3 GROUND WATER**

A total of 410 Ground water Stations are sampled quarterly; this includes alluvial wells, bedrock wells, and pre-1986 wells. Approximately one third of the wells are monitored monthly for water levels. Each ground water sample is analyzed for CLP, TCL, VOAs, TAL, Metals, as well as the following parameters:

<u>Radiochemical Parameters</u>	<u>Inorganic Parameters</u>	<u>Field Parameters</u>
Gross Alpha	Nitrate/Nitrite	Dissolved Oxygen (DO)
Gross Beta	Total Phosphorous	Specific Conductivity
Plutonium	Ortho-Phosphate	Temperature

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Radiochemical Parameters

Americium  
Strontium  
Tritium  
Uranium  
Cesium

Inorganic Parameters

Ammonia  
TDS  
Chlorine  
Fluorine  
Sulfate  
Carbonate  
Bicarbonate  
TSS  
Total CLP Metals & additional metals  
Dissolved CLP & additional metals  
Cyanide  
CLP Volatile Organic Constituents

Field Parameters

Turbidity  
pH

**SECTION 4. CONTRACTOR/SUBCONTRACTOR IDENTIFICATION**

Contractors and subcontractors being used on the RFP ER Program and the work they are performing are identified on the following list as required by paragraph 13 of the IAG.

<u>OU</u>	<u>Project</u>	<u>Subcontractor</u>	<u>Sub-Subcontractor</u>	<u>Work Description</u>	<u>Start Date</u>
1	Assessment	Ebasco	Dames & Moore	CMS/FS Report	Jan 92
1	Assessment	Dames & Moore		Public Health Evaluation	Apr 93
1	Assessment	Roy F. Weston		Revise RI Report, respond to agency comments	Feb 93
1	Assessment	S.M. Stoller		Environmental Evaluation	Apr 93
1	Remediation	Resource Tech.		B-891 Treatment System Operations Group, Inc. (RTG)	
2	Assessment	Woodward-Clyde		OU 2 RFI/RI Work Plan (alluvial and bedrock) and RI field work (drilling, well completion/development)	Sep 90
2	Assessment	Ebasco	S.M. Stoller	Environmental Evaluation	Feb 91
	Assessment	Woodward-Clyde	Layne	OU 2 RFI/RI Work Plan (bedrock), surficial soils	Mar 93
2	Remediation (RFG in April)	Reidel		Installation and operation of the water treatment system for South Walnut Creek Phase of OU 2 IRA	Jan 91
3	Assessment	IT Corporation	CH2M Hill	OU 3 Field Work and RI Report	Apr 92
3	Assessment	MRI		Wind Tunnel/Soil Resuspension Study	Aug 92
4	Remediation	HNUS	Halliburton Spec. Services	Process "C" and "A/B" Pond waste streams to a certifiable form for final disposition	Sep 91
4	Assessment	Parsons/Eng Science	Geraghty & Miller Wright Water,	Implement the Phase I RFI/RI Work Plan, includes drilling, sampling	Aug 92
		Stoller, Doty & Associates Applied Envir.		radiation surveys, etc.	
4	Remediation	Dames & Moore	UE&C	Management consulting to implement DOE Order 4700.1 and 4700.5	Jan 93
4	Remediation	ICF Kaiser		Conceptual redesign for sludge containerization	July 93

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<u>OU</u>	<u>Project</u>	<u>Subcontractor</u>	<u>Sub-Subcontractor</u>	<u>Work Description</u>	<u>Start Date</u>
5	Assessment	ASI Blackhawk GeoWalsh & Assoc. Layne Envir. Service Utility Mgmt. Service S.M. Stoller Adv. Terra Testing	Dames & Moore	Implementation of OU 5 Work Plan (excluding EE)	Jun 92
5	Assessment	S.M. Stoller		Implementation of EE section of OU 5 Work Plan	Sep 92
6	Assessment	Woodward-Clyde	Lane, Ogden, Geo Environmental	OU 6 RFI/RI Work Plan and Quality Assurance Addendum	Aug 92
6	Assessment	S.M. Stoller		EE	Sep 92
7	Assessment	S.M. Stoller	Walsh & Assoc.	OU 7 RFI/RI Work Plan including EE Plan and QA Addendum	Apr 90
8	Assessment	Jacobs Eng.		(No Sub tier subcontract) implement the Phase I RFI/RI Work Plan for non-intrusive field work for the IA OUs.	Aug 93
9	Assessment	Jacobs Eng.		(No Sub tier subcontract) implement the Phase I RFI/RI Work Plan for non-intrusive field work for the IA OUs.	Aug 93
10	Assessment	Jacobs Eng.		(No Sub tier subcontract) implement the Phase I RFI/RI Work Plan for non-intrusive field work for the IA OUs.	Aug 93
12	Assessment	Jacobs Eng.		(No Sub tier subcontract) implement the Phase I RFI/RI Work Plan for non-intrusive field work for the IA OUs.	Aug 93
13	Assessment	Jacobs Eng.		(No Sub tier subcontract) implement the Phase I RFI/RI Work Plan for non-intrusive field work for the IA OUs.	Aug 93
14	Assessment	Jacobs Eng.		(No Sub tier subcontract) implement the Phase I RFI/RI Work Plan for non-intrusive field work for the IA OUs.	Aug 93
15	Assessment	ERM-Rocky Mtn.	G.S. Miller, Inc.	Implementation of the RFI/RI Mar 93 Work Plan	Mar 93
SW	HRR	IT Corporation	Doty & Assoc.	Prepare HRR	Feb 91
SW	Adm. Record	QuantaLex		Maintain IAG Administrative Record	Oct 90
SW	Geo. Char.	Jacobs Eng.		Well Abandonment and Replacement	Mar 93
SW	Geo. Char.	Colorado State University		Support M.S. thesis of Structural Geology, of Front Range Area Near RFP	Nov 91

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**Contractor/Subcontractor Identification**

<u>QU</u>	<u>Project</u>	<u>Subcontractor</u>	<u>Sub-Subcontractor</u>	<u>Work Description</u>	<u>Start Date</u>
SW	Geo. Char.	S.M. Stoller		Prepare 1992 Annual RCRA Report and Addendum	Jan 93
SW	Geo. Char.	Colorado School of Mines		Masters level training program in ES and Engineering	Aug 92 Dec 94
SW	Geo. Char.	Woodward-Clyde		Support for the SSWMS	Feb 93
SW	Geo. Char.	Colorado State University		Sequential Extraction	April 92
SW	Geo. Char.	University of Colorado		Soil Monitoring Vadose Zone	Jun 92
SW	Geo. Char.	S.M. Stoller		Spatial Analysis/Computer Support	Mar 93
SW	Geo. Char.	Woodward - Clyde	SAIC/Wright Water		Jan 93
SW	Monitoring	IT Corporation		Analytical Services for ground water, surface water, and sediment	Jul 90
SW	QA	SAIC		Develop and implement QA program and field operations oversight	Dec 90
PM	Support	S.M. Stoller		Program Management Support	Oct 92
PM	QA Support.	SAIC		Provide QA/QC support to ER Program	Nov 92



## ACRONYMS

ADS	Activity Data Sheet
AIP	Agreement In Principle
AOC	Area of Contaminants
ARAR	Applicable or Relevant and Appropriate Requirements
ASRP	Accelerated Sludge Removal Project
BAT	Best Available Technology
BBS	Bulletin Board System
BCP	Baseline Change Proposal
BRAP	Baseline Risk Assessment Plan
CAD	Corrective Action Decision
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CHWA	Colorado Hazardous Waste Act
CMS	Corrective Measures Study
COC	Contaminant Of Concern
CPFM	Colloid Polishing Filter Method
CPT	Cone Penetrometer Testing
CRP	Community Relations Plan
CSU	Colorado State University
D&D	Decontamination & Decommissioning
DCN	Document Change Notice
DCP	Design Criteria Package
DLRP	Discharge Limits Radionuclides Plan
DO	Dissolved Oxygen
DOE	Department of Energy
DQO	Data Quality Objectives
DRR	Document Review Record
E&WM	Environmental and Waste Management
EA	Environmental Assessment
EE	Environmental Evaluation
EM	Environmental Management
END	Ecology and NEPA [National Environmental Policy Act] Division
EPA	Environmental Protection Agency
ER	Environmental Restoration
ERA	Ecological Risk Assessment
ERM	Environmental Restoration Management
FIDLER	Field Instrument for Detection of Low Energy Radiation
FS	Feasibility Study
FSP	Field Sampling Plan
FTU	Field Treatability Unit
FYP	Five-Year Plan
GAC	Granular Activated Carbon

GPR	Ground Penetrating Radar
H&S	Health and Safety
HSP	Health and Safety Plan
HAP	Health Advisory Panel
HHRA	Human Health Risk Assessment
HPGe	High Purity Germanium
HQ	Headquarters
HRR	Historical Release Report
IA	Industrial Area
IAG	Interagency Agreement
ICP-MS	Inductively Coupled Plasma Mass Spectrometer
IHSS	Individual Hazardous Substance Site
IM	Interim Measure
IRA	Interim Remedial Action
IRAP	Interim Remedial Action Plan
ITS	Interceptor Trench System
IWCP	Integrated Work Control Package
IX	Ion Exchange
LATO	Los Alamos Technology Office
LL	Low-level
LLMW	Low-level Mixed Waste
MOU	Memorandum of Understanding
MSVEU	Mobile Soil Vapor Extraction Unit
MTS	Master Task Subcontract
Nal	Sodium Iodine
NAPL	Non-Aqueous Phase Liquids
NEPA	National Environmental Policy Act
NFAJ	No Further Action Justification
NOV	Notice of Violation
NRT	Nuclear Remediation Technologies
NTS	Nevada Test Site
O&M	Operations and Management
OCI	Organizational Conflict of Interest
OPWL	Original Process Waste Line
OTD	Office of Technology Development
OU	Operable Unit
PA	Protected Area
PAC	Potential Area of Concern
PCB	Polychlorinated biphenyls
PCCB	Plant Change Control Board
pCi/g	picoCuries/grams
PCP	Process Control Plan
PI	Productivity Improvement
PP	Proposed Plan
ppb	Parts per billion
PPCD	Plan for Prevention of Contaminant Dispersion
PPE	Personal Protective Equipment
PU&D	Property Utilization and Disposal
QA	Quality Assurance

QAPP	Quality Assurance Project Plan
QP	Quality Plan
RAGS	Risk Assessment Guidance for Superfund
RCA	Radiological Control Area
RCRA	Resource Conservation and Recovery Act
RFEDS	Rocky Flats Environmental Database System
RFI	RCRA Facilities Investigation
RFP	Rocky Flats Plant
RI	Remedial Investigation
ROD	Record of Decision
RPT	Radiological Protection Technician
RWP	Radiological Worker Permit
SAR	Safety Analysis Report
SID	South Interceptor Ditch
SMO	Sample Management Office
SOP	Standard Operating Procedure
SOW	Statement of Work
SPPO	Solar Ponds Program Office
SVS	Soil Vapor Survey
TBD	To Be Determined
TCE	Trichloroethene
TDS	Total Dissolved Solids
TM	Technical Memorandum
TRG	Technical Review Group
TS	Treatability Study
TSR	Treatability Study Report
TSS	Total Suspended Solids
UBC	Under Building Contaminations
USFWS	United States Fish and Wildlife Service
UTL	Upper Tolerance Limits
UV	Ultraviolet
VOA	Volatile Organic Analyte
VOC	Volatile Organic Compound
WBS	Work Breakdown Structure
WS	Waste Solidification